2001

THE POLAR TIMES

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About Your Annual Dues

The Board of Governors has set the dues structure for the year 2000 and after as follows:

Annual Dues: Rate $15 (Foreign $17)
Library Dues: Rate $20 (Foreign $22)
Annual Corporate: Rate $100
Life Membership: $250 (Foreign $270)

For ease of administration we ask for annual dues to be submitted at the end of each calendar year, and we include a remittance envelope with the Fall/Winter issue of the *Polar Times*.

Since many of you send in your dues several years in advance, we tag your contributions to our membership files in our computer. This tag prints out on your membership sticker that we place on the envelope for the *Polar Times*. If it reads "expires 12/31/01," then your membership contribution is due on January 1, 2002. If it reads "expired 12/31/00," then you are two years in arrears. If it reads "expires 12/31/02...03...04," you are paid in advance. Life memberships should have an emboldened "Life Member" tag above their names. We will honor all dues paid in advance at the current rate, but upon expiration the new rates apply.

Multiple year contributions are welcome as are donations. We are a tax exempt organization as defined by Sec 501(C)3 of the IRS Code. ❑

Secretary's letter

This letter is my introduction to you as the new secretary of the American Polar Society. I officially assumed my new duties early this Summer and, since then, I have been sorting out the many responsibilities of the office that Brian Shoemaker has so deftly managed for the past eight or nine years. Believe me when I say it is a daunting task.

The Society and its members owe an immense debt of gratitude to Brian for the outstanding job he has done and the many things he has accomplished—the most important of which is bringing the organization back from the brink less than a decade ago. Without his dedication and tireless commitment, we would not be where we are today, an organization recognized as the leader in its field, growing and adapting to the fast pace of change in a fast changing world. For myself and on behalf of all our members, thanks and well done, Brian.

By way of background, I am a retired captain USN(R). I joined the Society in 1957 while wintering over at Little America V during Deepfreeze III. In the ensuing years I have maintained a keen, ongoing interest in all things polar and have joined a number of polar interest organizations. I have returned to the Ice twice since Deepfreeze, both times as a tourist/lecturer, the first occasion aboard *Marco Polo* during the Hillary-Fuchs reunion and again the following year (1994) aboard a Russian icebreaker.

This fall and winter I have been and will be traveling with the goal of meeting as many members of the Society staff as I can, to get to know them and share ideas as to how we can better serve the membership of the Society. So far I have had visits along the East Coast and will get to the Midwest and West Coast before too long. In the meantime I will stay connected by phone and e-mail with everyone in a leadership or administrative capacity. It is a splendid group of energetic and knowledgeable people—a joy to work with.

The first task facing us, now at this very moment, is the election of the Board of Governors. Nothing could be more important. You may have already received a mailing on this subject. Please take some time to give it your full attention. The future of the American Polar Society will be determined by your selections.

Please know that I would welcome any comments or suggestions on ways in which we can enhance the value of the Society to its members. I can be reached in a number of ways:

Snail Mail: 4816 Huron Drive, Pensacola, FL 32507
Telephone: 850.497.0759
Email: STO396@YAHOO.COM

Thank you,

Frank Stokes

Letter from the Membership Chair

Busy times here since last Spring when I assumed this part of Brian Shoemaker's old job. Nearly a third of our members were behind with their dues then, and that worried me. Some gently nagging letters have reduced the third to about a tenth, so we've decided that a *direct* mail statement of dues would be more effective than the traditional small blue and white envelope you'll still see in this issue. You have a choice for this last time: if your dues expire on 12/31/01 (as for about 500 of us), and you have not already responded to my direct mailing of late October, I urge you to do so now. Use the little blue and white envelope this one last time or, better yet, fill out the form I sent you in October and use the white envelope that came with it and my letter. We need the money to keep going, growing, and doing things better. Please do not procrastinate.

The membership drive, which began this summer, has involved distributing about 900 complimentary copies of *The Polar Times* to various places around the world. Each copy carried a specially tailored letter of invitation to join the Society. Bundles of copies have gone off to each of the three U.S. bases in Antarctica, the New Zealander's Scott base, and the store at Port Lockroy frequented by tourists. Copies also went to the icebreakers *Healy*, *Gould*, *Palmer*, *Polar Star* and *Polar Sea*. And a cyberspace special posted on Billy-Ace's website brought in about 30 new members in the first weeks of October. The invitation letters in the distributed *Polar Times* should bring more. Each of you can help; our goal is to double in size (to 2,000 members) by 2004. Suggest a new member, and I will send them a *Polar Times* with a charmingly persuasive letter of invitation.

Finally, don't forget to order gift memberships for friends, colleagues, parents or grandchildren—or your local library. Order before the new year, and I'll send both you and the gift recipient one of our beautiful Polar Society lapel pins. Now is a good time, and the best way to contact me is by email (*ampolars@aol.com*) or phone (319.338.3457).

Best wishes,

Bob Kremenak

OUR COVER: The new South Pole Station has a planned 45-year service life. ❑
NSF/USAP photo by Jerry Marty

American Polar Society

The American Polar Society was founded Nov. 29, 1934, to band together all persons interested in polar exploration. Membership dues are $15 a year ($17, foreign), and entitle members to receive ***The Polar Times*** twice a year. The American Polar Society is classified as a tax exempt organization under Sec 501(C)3 of the IRS Code. For more information about the American Polar Society, contact **Capt. FRANK STOKES, APS Secretary,** at 1.850.497.0759 or send email to *sto346@yahoo.com.*

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Construction continues on new South Pole station

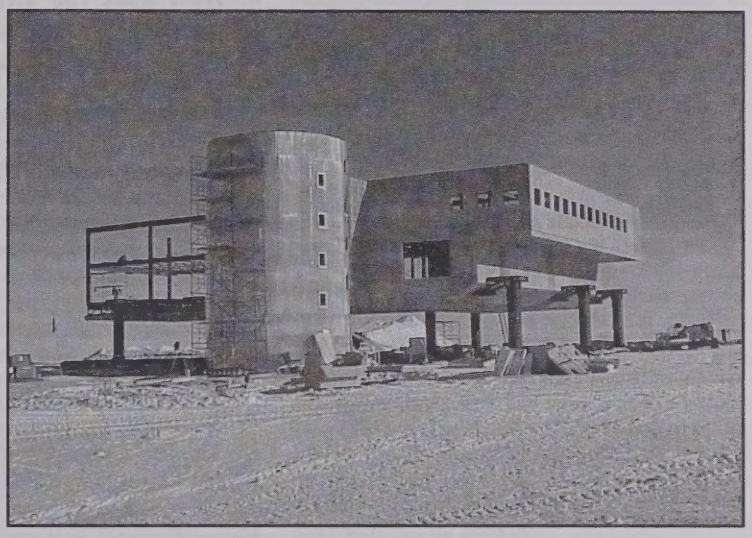
by Jeff Rubin

The South Pole Redevelopment Project consists of two separate projects. The higher-priority South Pole Safety and Environmental project was granted $25 million in 1996 to build a new garage/shop (completed in November 1999), a 450,000-gallon fuel storage facility (completed in December 1998) and power plant, which went online 20 January 2001, increasing the station's peak generating capacity to one megawatt and providing three levels of backup redundancy.

The second project, the South Pole Station Modernization, involves the construction of an entirely new station at a cost of $127.9 million. Work began in 2000 and will be completed in 2006. The new station will include a remote science facility called the Dark Sector Laboratory; a radio frequency building and MARISAT facility with a nine-meter satellite dish; a cargo/warehouse building, a 44-foot-diameter arch from the old station which is being renovated; and a 60,000-square-foot elevated station comprising two C-shaped "pods" raised on pillars ten feet above the snow surface.

The two-story pods—each 180 feet long and sheathed in gun-metal grey aluminum—will be joined by a 40-foot long, two-story link. Each pod is made up of four modules: two at the front form the body of the C, while two others—each 100 feet long and 40 feet wide—form the legs of the C.

Pod A will include summer and winter housing, the food service, a bar, recreation areas, mechanical/electrical systems rooms, a medical facility/hospital, science areas, a store/post office, a greenhouse, a laundry, and a non-smoking TV lounge/library.



NSF/USAP photo by Jerry Marty of the National Science Foundation

Pod B will include additional summer housing, a lounge, an emergency power plant, a science lab, a double-story gym, a workout area, a music-practice room, communications areas, offices, conference rooms, an electronics workshop, a ham radio room, a smoking TV lounge/library and a multi-purpose room that can be used for activities including religious services and arts and crafts.

To combat the drifting snow which ultimately destroyed the first Pole station and is in the process of burying the current station under the Dome, the new station will be raised above the snow surface. The complex is arranged in a line running perpendicular to the prevailing winter winds, and the windward side of the pods will be shaped like the leading edge of an airfoil to channel the wind underneath the station to scour away snow. Similarly, a fabric wind deflector in front of the connecting link will mimic the wind shape of the front modules.

The elevated complex is connected to a subsurface main power plant, cargo facility, garage/shop, and fuel storage by a vertical tower, equivalent to a four-story climb. For obvious reasons, the 72-foot tower, enclosed in a 37-foot-diameter shiny silver corrugated aluminum shell, was quickly nicknamed the "Beer Can" by station personnel. The tower includes a staircase, cargo lift, and all plumbing and utility risers.

Most importantly, the elevated complex is designed to be raised by a full story on two separate occasions during the station's 45-year design life. A 100-ton hydraulic jack will be stationed at each of the 18 supporting columns on each pod. After the pod is raised, an additional 10-foot length will be inserted into the column and the pod will be set back down onto the taller column. Jacking is expected to require at least 30 days on each occasion, and is designed to allow all station activities to continue as normal during the process.

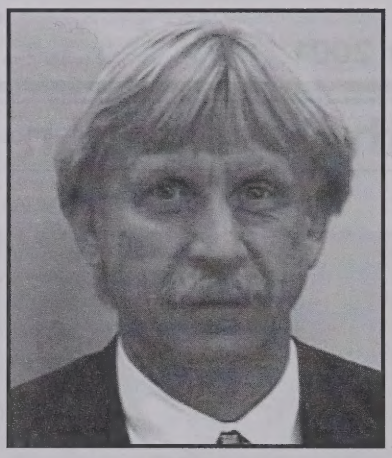
The first jacking may be necessary by 2016. An earlier jacking was avoided by erecting the station on a compacted snow berm raised six feet above the surrounding grade.

The construction of the new station is one of the most difficult engineering and construction challenges currently being undertaken anywhere in the world. ❑

NSF/USAP photo by Carleton Walker of Raytheon Polar Services Co.

Station personnel have christened new station's tower the "Beer Can."

'Polar Times' interviews Jerry W. Marty



Jerry W. Marty

Jerry W. Marty is the construction project manager for the South Pole Redevelopment Project (SPRP) in the National Science Foundation's Office of Polar Programs in Arlington, Va. He spoke with *The Polar Times*' Antarctic editor, Jeff Rubin, just prior to heading to the Pole for the new construction season.

• How many people are building the new station?

This summer (2001-2002 season) we have a total station population of 220 people, including 85 construction workers, 50 scientists and 85 station support personnel, equipment representatives, government inspectors and NSF staff. In the winter we just completed, there were 50 winterovers, 17 involved in construction, 11 scientists and 22 station support personnel. Next year we could have as many as 26 winterovers involved in construction, with a total winter population as high as 59 or 60, which would be the record.

• What's it like building at the Pole?

The first challenge is the limited number of days in the construction season. The station opening for commencement of construction is on or around November 1 each year. The station closing is on or around February 15. We work six days a week—Sundays are off—and have Thanksgiving, Christmas and New Year's holidays, so we have approximately 90 work days.

The next challenge is that rolling stock equipment, cranes and things that you need to work outside, have serious problems working below minus 40°F. When we first get to the station, temperatures are below that. And as the temperature drops as we get closer to February 15, we may lose some days.

• How does the cold affect the workers?

The cold necessitates frequent work breaks in order to avoid cold-related injuries, like pulled muscles and fatigue. The workers come inside the Dome to warm up, and there are warm-up shacks or structures that have additional equipment and tools that they can get into if they should get cold in between breaks.

• How does the altitude affect the workers?

The altitude is 9,300 feet, but the barometric pressure equivalent can push it up to 10,500 or 11,000 feet, so just walking around—even after you become acclimated—does cause fatigue. And you compound that with extremely low humidity (approximately three percent). It's exremely dry, so you become dehydrated. And then you're wearing 35, 38 pounds of clothing. When we build the schedules, we build in a factor of productivity of 2.16, meaning that it takes 2.16 times longer to do something at the Pole than it does anywhere in the United States. So it's a little over twice the time and effort.

• The fact that the builders are working in bulky suits they cannot remove reminds me of construction of the International Space Station—is it similar?

The design of the station went through a constructability review, so the difficulty of working with gloves and with limited pieces of equipment was incorporated into the design. For example, things are through-bolted so they're easily done, or as easily as they possibly can be, with a minimal amount of using your hands, and definitely not taking off your gloves.

Every single room will have a window. For the first time, we'll have a South Pole station where you can look outside. It's quite a change from living in the Dome.

Our program is also very similar if not the same as the space station because the transport vehicle to get components to the space station is the shuttle, and it has limited space. Our limitation is the LC-130 Hercules aircraft from McMurdo to Pole. We had to design everything so it was Herc-able—it had to fit inside the Herc. And we had to be able to get it out of the Herc and handle it with the equipment we had at Pole. That brought with it some challenges. We would have preferred bigger items, longer pieces of steel, bigger panels, but our constraint was the fuselage dimensions of the LC-130.

• How many flights are you making each year to bring in the building materials?

This year we are bringing up to Pole 348 flights. Of those, 151 are specifically for construction. It's a staggering number. It's not uncommon to see two or even three LC-130s on the deck at the same time. It's a very busy place these days. Over the total life of the SPRP, 21.76 million pounds of cargo will be brought to Pole, representing in excess of 800 total flights.

• Have all the construction materials been procured?

Basically all of the big dumb heavy components for the construction of the station have been procured and are either at Pole, at McMurdo, or on their way to McMurdo. We're still finalizing the information technology and the communications center. We held back on that because we wanted to get the benefit of spending money on the most advanced technology.

• Did you test-assemble parts of the station before heading South?

We took a component of wing B-2 at the steel fabricator's plant in Little Rock, Ark., and we assembled it out in the field next to the plant, specifically the structural components of the station, the grade beams, the columns, the first-floor framing, the second-floor framing, including the attachment of the leveling devices and the jacking columns. We took what we felt was the most representative section of the entire station, and we had the field fabricator put it together in concert with the contractor. Some of the people who were actually going to be on site last year to put the first steel together were there, the superintendents and foremen.

It's the old story: if you've done it once, it sure is a lot easier the second time. Even though these folks do this for a living, as steelworkers, it's always nice to see the bolt patterns and the sticks of steel and understand how they're lifted into place—when it's 80 degrees above zero as opposed to 80 degrees below zero.

In a couple of cases, we realized the bolt patterns weren't working as simply or as efficiently as we thought. Or, the bolt patterns on the drawings worked, but in the field they didn't. We were able to identify a couple of problem areas that would have been detrimental to us maintaining the construction schedule. So that was extremely beneficial.

We also test-built the MARISAT dish and pedestal in Kilgore, Texas.

• What have been the major headaches?

So far, I'm proud to say that we are maintaining the construction schedule, summer and winter. You have day-to-day challenges, where things don't fit or they don't line up,

which is typical. Has there been anything which has been a significant problem? No. But the weather last year precluded us from getting all the flights into Pole that we had planned, which means that this year we are in what we call a 'Need and Feed' scenario. Normally, the year before we construct something, we would like to have all those materials on site. This year, as we are building modules A-3 and B-2, the materials will be coming our way.

• Is any section of the station trickier than another to build?

It's pretty much equally difficult. Where I see a major challenge in front of us—although we've planned for it—is the transition from the old station to the new station. This station represents a hotel, a hospital, food service, power plant, airport, scientific research facility, fuel storage, vehicle maintenance, communications. We have all that in an existing station, and we're transitioning over to a new station; yet we cannot allow any systems to go down. We've started the transition already. But all of those transitions, as you connect wires and piping and systems from one area to the next, have a lot of challenges.

• Instead of making the station "jackable," why not just build it on taller columns?

That's a good question. The issue of going that high brings with it some structural challenges with respect to transferring loads, footings, as well as the wind loads. That would have changed the dynamics of the shell and the framing significantly, and increased the cost.

• Can the station be expanded?

Budgetary constraints were such that we were allowed to build the facility to support 110 people in the summer (and 50 during the winter), with an infrastructure in place—water, sewage, power, food service—to support an expanded station in the future, should science so dictate, to accommodate a population of 150. When the station is built in 2006, it will have one leg that is shorter. That leg, module A-4, is the platform to which we would add a first and second floor to house an additonal 40 people.

• Can you describe the rooms for station personnel?

Winterovers' rooms will each measure 8 feet 6 inches by 9 feet 8 inches, or nearly 83 square feet. Summer people's rooms will be 6 feet 5 inches by 9 feet 8 inches, or nearly 64 square feet.

Every single room will have a window. For the first time, we'll have a South Pole station where you can look outside. It's quite a change from living in the Dome.

• What are the bathrooms like?

For example, for the first floor of Pod A-1, which houses 24 people, at the end of the wing where it connects to A-2, there is a vestibule, and one entire side is women and the other side is men. The women have two showers and three water closets and then the sinks, and on the other side, we have two showers, two water closets and a urinal. No bathtubs. Navy showers will remain in effect for both summer and winter—we still have to make water by melting snow.

• Is there a sauna? Or will that be the end of the 300 Club?

(laughing) We do have a sauna. We have a sauna on the first floor of Pod A-2. I don't think we'll ever get away from the 300 Club, for those hardy souls who want to do that.

• What kind of insulation will the station have?

The panels are prefabricated with the insulation and the interior and exterior sheathing all as one. The panel is approximately one foot thick and it represents R values of R-70 down to R-40, depending on whether it's the floor, the wall or the ceiling.

• Can parts of the new station be closed off and winterized when not required?

We will not totally cold-soak those areas, but we will basically bring them cold so that we will not have to expend additional energy to heat areas that are not occupied.

• Are alternative energy sources utilized?

We've incorporated photovoltaic panels on the front face of modules A-2 and A-3 and B-2 and B-3. Between the windows, you'll see rectangular panels—those are photovoltaic panels. During the summer we will take advantage of the 24 hours of sunlight when the sun's at its maximum height, and we will draw power off the sun. Certainly during the winter that doesn't work, and it doesn't work the entire summer. But there was an opportunity that made sense, and we've incorporated it.

We also experimented with wind turbines, but we found that the amount of wind that we have at Pole was not adequate without going to a very large windmill farm.

We have also incorporated what we call hydronic heating, which we use at the existing station. We take the waste heat off generator engine jackets and from the flue gas system, heat a glycol liquid and pump that through the station. That's how the station is heated, not by electric power. The issue is to gain every bit of power out of every gallon of fuel that we're burning.

• What will happen to the Dome?

The budget for the project as approved by Congress represents and reflects demolition of the Dome and the Skylab. That is also incorporated into the environmental impact statement. The method of demolition would be to use metal cutting saws and torches and just tear everything down as quickly as we can, then cut it up in pieces small enough to get them in crates and palletized and off the station as quickly as possible. To disassemble the Dome for reassembly, you have to be careful to cut the bolt patterns apart, mark each panel, frequency, strut, etc., then also containerize it to preclude damage, which increases the amount of flights needed to get the materials off station.

The official position on the Dome and the Skylab has not changed from the budget as approved by Congress. The other side of the coin is that there are various groups that have talked about saving the Dome and bringing it back for a museum. The Dome is not weatherproof, which means if you brought it back to the States, you would have to put another cover over it because it was designed for the Antarctic, which does not have moisture. So that brings some challenges with it. But right now we're within a couple of years of starting to proceed with what I call 'demolition.' ❑

NSF/USAP photo by Ernie Mastrogianni of the Milwaukee Journal Sentinel

Dying dome oversees new station construction in the distance.

Due South

By Jeff Rubin, Antarctic Editor

SHACKLETONMANIA: Sir Ernest seems to be everywhere these days. Books, movies and specialized tours visiting "Shackleton sites" at South Georgia continue to proliferate at a surprising rate. The Polar Sale at Christie's in September (see article, p. 13) once again raised his profile—and a pun-loving editor at *The Irish Times* headlined the story "The Importance of Buying Ernest."

Meanwhile, famed undersea explorer Robert Ballard is reported to be trying to raise nearly $2 million to search for the crushed remains of *Endurance*. The effort would employ the Coast Guard icebreaker *Polar Sea* and two remote-controlled mini-subs, according to *The Times* of London. Sonar would be used to find the wreck, which Ballard claims he has located to within "a few square miles."

And John Tierney, writing in the *The New York Times*, compared the twisted aluminum remnant of the destroyed World Trade Center towers to "the masts in the famous flash-lit photo of *Endurance*."

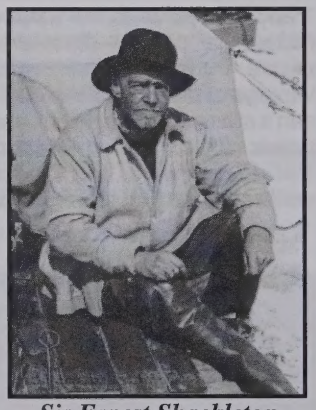
Books, of course, are the main contributor to the public's growing familiarity with The Boss. Among the shelves of Shack-related titles are four children's books about the Endurance expedition alone. A Seattle high school biology teacher, Melinda Mueller, has even written an epic poem about the expedition, *What the Ice Gets*. Published last year by Van West & Co., it includes short passages from crew members' letters and diaries.

A beautiful large-format book just published, *South with Endurance: The Photographs of Frank Hurley* (Simon & Schuster, 2001, 320 pp, $50) reproduces every single image known from the *Endurance* expedition, including many remarkable color photographs that have never before been published.

Movies—two current and two upcoming—will only increase Shackletonmania. A terrific giant-screen film, "Shackleton's Antarctic Adventure," opened in theatres in the U.S. and Europe this summer. The 40-minute film was directed by George ("Pumping Iron") Butler and narrated by Kevin Spacey. A 92-minute feature documentary, "The Endurance: Shackleton's Legendary Antarctic Expedition," also directed by Mr. Butler, was narrated by Liam Neeson and based on the book by Caroline Alexander, curator of the *Endurance* exhibition that originated at New York City's American Museum of Natural History.

Both films include footage shot in the Antarctic and at South Georgia and are well worth seeking out.

At least two other movies about *Endurance* are currently in production. Shakespearean actor Kenneth Branagh stars in the most expensive (£27 million) TV mini-series ever made, a four-part series being filmed in Greenland by cable's A&E and Britain's Channel Four International. "Perfect Storm" director Wolfgang Petersen is working on a $40 million big-screen version, "Endurance," starring Russell Crowe.



***Sir Ernest Shackleton at* Patience Camp**

TOURISM NUMBERS UP: The International Association of Antarctica Tour Operators (IAATO) reported that 12,248 tourists landed in Antarctica either by ship or by plane during the 2000-2001 season, the second-highest annual total. Nearly half came from the U.S.

IAATO forecasts extremely rapid growth in Antarctic tourism: 14,500 visitors for the 2001-02 season (though almost certainly this number will be significantly less following the events of 9/11); 19,000 for 2002-03; and another 1,000 visitors annually for the following three seasons. For the 2005-06 season, IAATO predicts a total of 22,000 visitors—more than double the 10,013 in 1998-99.

What's behind this startling growth? Several very large cruise ships are joining the Antarctic tourist fleet. In a surprising move, given its past reluctance, IAATO agreed to welcome as members cruise lines using ships carrying as many as 500 passengers. IAATO is currently studying concerns about both safety (how to rescue that many passengers and crew in case of an accident) and environmental damage to fragile landing sites. ❑

NZ works to set up whale sanctuary

***Associated Press*, WELLINGTON, New Zealand, by Ray Lilley**—New Zealand is forging a coalition of South Pacific nations committed to a ban on whaling in their waters after repeatedly being frustrated in its attempts to set up an internationally recognized whale sanctuary in the area.

New Zealand is working on the "nation-state" strategy for protecting whales, after acknowledging it is unlikely to win enough support at the International Whaling Commission for creation of a South Pacific sanctuary, Conservation Minister Sandra Lee said Wednesday.

"By working together, the small Pacific Island nations can achieve our shared goal of a whale sanctuary, despite the opposition of the whalers," she said.

A joint Australia/New Zealand proposal for a South Pacific-wide whale protection sanctuary failed to win the necessary 75 percent support at the last two IWC annual meetings.

The issue will be considered again next May at the commission's annual meeting in Shimonoseki—home port for Japan's whaling fleet.

"We should not be too optimistic about achieving a three-quarters majority vote there," she cautioned.

"The idea of any new sanctuaries for whales...is anathema to Japan and Norway, and they have bitterly opposed our proposal at the last two annual meetings of the IWC, and will do so again next year," Lee said.

"It is no secret that there is a bloc of developing countries, many of whom have recently joined the IWC, who vote down the line with whalers," Lee said.

Japan has been accused of buying up the smaller nations' votes in return for development aid.

Under New Zealand's alternative strategy, South Pacific nations would declare their territorial waters as sanctuaries for the sea mammals.

The Cook Islands north of New Zealand has just declared its exclusive economic zone, which covers 770,000 square miles—the size of western Europe—to be a whale sanctuary.

French Polynesia, with an economic zone of twice that area, is preparing legislation to follow suit, Lee said.

"Whales are already fully protected in Tonga, New Zealand and Australia, and we are continuing to encourage our Pacific Island neighbors, such as New Caledonia and Niue, to consider similar moves," she added. ❑

ANTARCTIC NOTES

by Jeff Rubin

Japanese Team Finds 3,554 Meteorites

The Associated Press*, TOKYO, 23 Jan 2001**—Japanese scientists have found 3,554 meteorites in Antarctica during a three-week search, the government said. The finds were made around the Yamato mountain range about 186 miles from Japan's base. In 1998, a total of 4,180 meteorites were discovered by the Japanese in Antarctica—the largest number found in a single search. To date, Japan's teams have found about 13,000 meteorites in Antarctica, about half of all found there. ❑ ***(cb Billy-Ace Baker)

Global 4 To 7 Degree Temperature Rise Likely By 2100

National Science Foundation*, 19 July 2001**—Overwhelming odds point to global average temperatures that will rise 4 to 7 degrees over the coming century, according to a new probability analysis by scientists in the U.S. and Europe. As early as 2030 the planet is likely to heat up one to two degrees, say the scientists. A one-degree temperature rise was observed over the past century. The study is funded in part by the National Science Foundation (NSF) and appears in the July 20 issue of the journal *Science*. ❑ ***(cb Brian Shoemaker)

New Zealand Launches World's Biggest Rat Hunt

Reuters*, WELLINGTON, 25 July 2001, by Rodney Joyce**—New Zealand conservation officials have dropped 120 tonnes of bait and a team of 20 rat hunters onto sub-Antarctic Campbell Island in what they say is the world's largest rodent eradication project. They aim to wipe out up to 200,000 Norway rats probably introduced to the island, 440 miles south of New Zealand's South Island, by 19th century whalers and sealers. The $US1.1 million kill is designed to restore the 28,000-acre island to its natural state and allow the return of a flightless teal duck and a species of wading bird found nowhere else. A small population of Campbell Island teal has been preserved in captivity while Campbell Island snipes were discovered still surviving on a nearby islet free of rodents. Conservation Minister Sandra Lee said the project eclipsed in size an earlier eradication programme on British Columbia's 7,650-acre Langara Island. The Department of Conservation said it would be two years before it knew if rats had gone from the island, which is reported to have the world's highest concentration of rats. ❑ ***(cb Billy-Ace Baker)

Condoms for Antarctic Kiwis

Christchurch Press*, 2 Aug 2001, by Rachel Walsh**—Christchurch company Jackpot Vending Machines has filled an order for two condom machines to be sent to Scott Base, along with a plentiful supply of chocolate, strawberry, and mint-flavoured condoms. ❑ ***(cb Billy-Ace Baker)

EDITOR'S NOTE: *Condoms are free at all U.S. Antarctic stations.*

Wind Chill Computation Changed

Associated Press*, MINNEAPOLIS, 16 Aug 2001, by Steve Karnowski**—The National Weather Service and its Canadian counterpart are switching to a tamer formula for computing wind chills, one they say will provide more accurate information. A wind chill index of 70 below , for example, will work out to 44 below with the new formula, which is based on how the wind actually feels to exposed human skin. The old wind chill charts were based on research in Antarctica in the early 1940s, when scientists measured how wind affected the rate at which water froze. The new research studied how wind and cold actually affect people. One key difference is that instead of using the wind speed measured at 33 feet above the ground, meteorologists will now use readings taken at five feet. ❑ ***(cb Billy-Ace Baker)

EDITOR'S NOTE: *Charlie Passel, an Honorary Member of the American Polar Society (See Vol. 2 No. 12 of the* Polar Times*), did the research for the Wind Chill Chart on the Third Byrd Expedition. He and Paul Siple (another Honorary Member of the American Polar Society; see issue #45 of the* Polar Times*) wrote the paper that sold it to the world. Passel's book "ICE, the Antarctic Diary of Charles Passel," is one of the best pieces of writing to come out of Antarctica.*

Scientists Chart Iron Cycle in Antarctic Ocean

National Science Foundation*, 26 Sept 2001**—Scientists at the University of California at Santa Barbara have found that sunlight plays an important role in cycling iron in the ocean and making it available to marine life. Iron, which is necessary for life, is scarce in the ocean. NSF-supported researchers found that light helps transform the mineral into a form that can be easily taken up by phytoplankton and other microorganisms. They report their findings in the September 27 issue of *Nature*. The team's research grew partly from early studies indicating that fertilizing the oceans with iron could stimulate the growth of plant life that consume carbon dioxide, and thereby counteract global warming. In those studies, iron dropped from ships encouraged phytoplankton to bloom profusely, but only for a short time. ❑ ***(cb Brian Shoemaker)

South Pole Marathon to Be Run on 8 Jan 2002

The first-ever marathon on the South polar plateau—with its finish line at 90 South—will be held this austral summer by Adventure Network International (ANI), a travel company specializing in trips to the Antarctic interior. The race will start at 89.5° South and cover 26 miles and 385 yards over a flagged route expected to be relatively flat, although the snow may be soft and up to 6 inches deep. ANI tells potential participants that it will probably be "like running through a muddy, plowed field" and warns that fit runners might only be able to make half or less their normal speed: "You should have run at least four marathons and two half-marathons, as well as recent experience of fell running, mountain running and endurance events—preferably in cold climates and at altitude, before considering participation in this marathon." En route, a guide and a doctor will be standing by with a skidoo, should there be any difficulties. Priced from $25,000, the 9-day trip includes the option to extend one's stay in Antarctica up to five days at no additional charge. ❑ ***by Jeff Rubin***

Ozone Hole Size Remained Constant

Associated Press*, WASHINGTON, 17 Oct 2001, by Randolph E. Schmid**—Scientists at NASA and the National Oceanic and Atmospheric Administration reported yesterday that satellite measurements show the ozone hole peaked at about 10 million square miles this year, similar in size to the last three years. "This is consistent with human-produced chlorine compounds that destroy ozone reaching their peak concentrations in the atmosphere, leveling off, and now beginning a very slow decline," said NOAA scientist Samuel Oltmans. Over the next 30 to 50 years, the severity of the ozone hole in Antarctica is expected to decrease as chlorine levels in the atmosphere decline. ❑ ***(cb Billy-Ace Baker)

Auroras Make Rare Joint Appearance in Film

www.NASA.gov*, 25 Oct 2001**—Scientists using NASA's Polar spacecraft have captured the first-ever movie of auroras dancing simultaneously around both of Earth's polar regions. During a space weather storm on October 22, Polar's Visible Imaging System observed the aurora borealis and aurora australis expanding and brightening in parallel at opposite ends of the world. The images confirm the three-century old theory that auroras in the northern and southern hemispheres are nearly mirror images (conjugates) of each other. Preliminary research suggests that while the auroras mimic each other on broad scales, some fine features do not match. ❑ ***(cb Billy-Ace Baker)

New Zealand Issues 12 Penguin Stamps

A set of six penguin stamps was issued by New Zealand Post in early November featuring six penguin species found around the New Zealand coastline: rockhopper (40¢), little blue (80¢), Snares crested (90¢), erect crested ($1.30), Fiordland crested ($1.50) and yellow-eyed ($2). New Zealand is home to more penguin species than any other country. An interesting aspect of this set is that the design of the 80¢ little blue penguin stamp erroneously shows the closely-related, but differently-marked, white-flippered penguin.

A similar set of penguin stamps of the same denominations was also issued for the Ross Dependency, New Zealand's claim in Antarctica. It features scenes of Adélie and emperor penguins in their Antarctic habitats. ❑ ***by Billy-Ace Baker***

Scientists Search for Cancer Cure in Snowfields

***Expedition News - www.expeditionnews.com*, 1 Nov 2001, by Jeff Blumenfeld**—An expedition departs for the Windmill Islands near Australia's Casey Station next month to examine snow algae—conspicuous members of the microbial community that impart a red, orange, or green color to snow. The colors depend on the relative amounts of cellular chlorophyll and carotenoid pigments that protect the algae from ultraviolet radiation. Research indicates potential cancer-fighting compounds are produced in response to UV light stress, the nature of which remain a mystery that will be studied by Brian Duval, 41, an environmental analyst from the Massachusetts Department of Environmental Protection. Said Duval: "It is hoped that the knowledge gained from this project will benefit the cancer and medical communities. For example, this research may provide the basis for the development of new topical ointments for the prevention of skin cancer." ❑

Tourist Circumnavigation Set for 2002-2003

Rich—and patient—Antarcticophiles will want to reserve their places now for Quark Expeditions' 66-day, 13,000-mile circumnavigation of Antarctica aboard the 24,000-hp Russian icebreaker *Kapitan Khlebnikov*, which will sail westward from Lyttelton, N.Z., on 26 November 2002 and return to the same port on 1 February 2003. Quark offered an eastward circumnavigation aboard *Khlebnikov* in 1996-97. Fares range from $34,950 per person for a triple cabin up to $67,950 per person for a corner suite on what, if completed, is believed to be just the eleventh circuit of the continent by a ship, not including yachts. For reservations, call (800) 356-5699. ❑

Highlights of 2001-2002 U.S. research in Antarctica

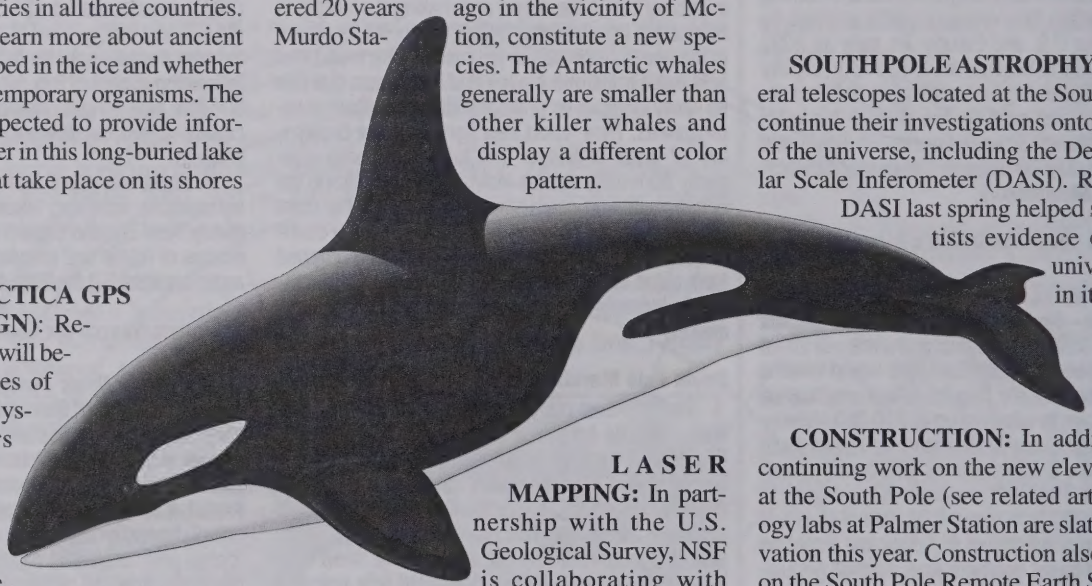
National Science Foundation, **26 Sept 2001**—The U.S. Antarctic Program's 2001-2002 research season begins in October, when the New York Air National Guard and U.S. Air Force will begin bringing about 3,000 researchers and logistics personnel to McMurdo Station. The flights will continue until February, the onset of fall in Antarctica. Among the significant research projects scheduled for the 2001-2002 season are the following.

LAKE VOSTOK: Ice that formed over the last 400,000 years and that had been extracted from the ice sheet above subglacial Lake Vostok in an earlier joint Russian, French, and U.S. project, will be retrieved and analyzed in laboratories in all three countries. Scientists expect to learn more about ancient microorganisms trapped in the ice and whether they differ from contemporary organisms. The analyses also are expected to provide information about the water in this long-buried lake and the processes that take place on its shores and in its waters.

WEST ANTARCTICA GPS NETWORK (WAGN): Researchers this season will begin to deploy a series of Global Positioning System transceivers across the West Antarctic Ice Sheet (WAIS). The ability to measure the motions of the Earth's crust in the bedrock underlying the WAIS is critical to understanding the dynamics of the ice sheet and its potential role in future global change scenarios, as well as improving the understanding of Antarctica's role in global plate motions. WAGN will complement existing GPS projects by filling a major gap in coverage among several discrete crustal blocks that make up West Antarctica.

INTERNATIONAL TRANSANTARCTIC SCIENTIFIC EXPEDITION (ITASE): The U.S. component of the multiyear International Transantarctic Scientific Expedition (US ITASE) will carry out, this season, the third in a series of four traverses over the WAIS. The broad aim of US ITASE is to develop an understanding of the last 200 years of past west Antarctic climate and environmental change. ITASE is a multidisciplinary program that integrates remote sensing, meteorology, ice coring, surface glaciology and geophysics. This year researchers will continue to collect shallow ice core and snow pit samples for various ice chemical analyses, shallow and deep radar data to look at internal layer reflections and bedrock topography, atmospheric samples, and meteorological readings to understand the current climate of the ice sheet.

KILLER WHALES: Working aboard a U.S. Coast Guard icebreaker, scientists for the National Oceanic and Atmospheric Administration (NOAA) will obtain tissue samples from live, free-swimming killer whales to determine whether a group of whales, discovered 20 years ago in the vicinity of McMurdo Station, constitute a new species. The Antarctic whales generally are smaller than other killer whales and display a different color pattern.



LASER MAPPING: In partnership with the U.S. Geological Survey, NSF is collaborating with NASA to test a scanning laser altimeter system in the vicinity of McMurdo. The data collected will be used by NSF researchers studying biology, geology, and glaciology and by NASA's ICESat team to assist in the calibration of their data.

SOUTHERN OCEAN GLOBAL ECOSYSTEMS DYNAMICS (SO GLOBEC): The icebreaker *Nathaniel B. Palmer* and the ice-strengthened *Laurence M. Gould* will conduct five cruises in Marguerite Bay in the Antarctic Peninsula region. A continuation of research undertaken in the 2001 research season, the new cruises will deploy a series of moorings, which will include current meters, sensors to measure salinity, temperature and zooplankton concentration, upward-looking acoustic sounders to track ice motion, and acoustic Doppler current profilers.

HISTORIC HUTS: Researchers will study the biological and non-biological agents responsible for causing deterioration in a series of historically significant huts built by Antarctic explorers in the early 20th century. Over the past 90 years, the extremes of the polar environment have protected some of the artifacts in the huts from rapid decay, but conservators have become concerned about degradation of these important historical, archaeological sites. They will study the mechanisms and progressive sequence of events taking place during decay processes, test methods to be used to control future deterioration, determine the extent of environmental pollutants in soils at the historic sites, and evaluate chemical spills within the huts.

SOUTH POLE ASTROPHYSICS: Several telescopes located at the South Pole will continue their investigations onto the origins of the universe, including the Degree Angular Scale Inferometer (DASI). Results from DASI last spring helped show scientists evidence of how the universe looked in its infancy.

CONSTRUCTION: In addition to the continuing work on the new elevated station at the South Pole (see related articles), biology labs at Palmer Station are slated for renovation this year. Construction also will begin on the South Pole Remote Earth Science Observatory (SPRESO), located five miles from South Pole station. Seismic data already collected at Pole is in high demand among researchers; the new observatory at its more remote site will improve the usefulness of the data by reducing the amount of background noise from the station. ❑ ***(cb Brian Shoemaker)***

Photo by Simon Gibson

This cover shot is **not** *why the "Men of Antarctica" calendar was named "Most Sought After Publication" at Scott Base.*

"Men of Antarctica" pose nude for calendar

by Jeff Rubin

Stripping down and strategically placing props like a can of beer, a group of Kiwi sea-ice researchers posed nude for a "Men of Antarctica" calendar.

The calendar was shot outdoors at Scott Base on "very, very calm days" in temps as low as minus 31°F. "At these temperatures, shrinkage is at a maximum, and all men are equal," said calendar photographer Simon Gibson, 37.

"It started as a joke with one participant in 1999," Gibson said, "but in 2000, four blokes were in it and by 2001, five were. This [coming] year we hope to have at least 6 to 10 different blokes...but it's very hard to find willing participants."

The calendar men are employees of Industrial Research Ltd, a New Zealand government-funded research laboratory. They have run an Antarctic sea ice research program for the past 12 years

Models posed clad only in boots, sunglasses and the occasional hat. "Mr. January," Dave Cochrane, sustained the only damage—his skin stuck to the ice block on which he lay down.

Gibson, who posed for the months of February and December, among others, said that for bare skin at temps of minus 31°F, "the slightest bit of wind feels like fire."

The calendars have proven very popular, with all 200 copies of the 2001 edition snapped up by fans in many countries, including a group of New Zealand nuns. "Women seem to love the fact that we're all just average guys," Gibson said.

The effort was also named "Most Sought-After Publication" at Industrial Research for the year, "which miffed a few of the scientists," he added.

For information on the 2002 edition, visit *www.geocities.com/moa_enterprise/moa.html.* ❑

Hershey Bar mystery at South Pole

By Jeff Rubin

Arare 60-year-old Hershey ration bar recently discovered under two and a half feet of snow at the South Pole has archivists at the Pennsylvania chocolate manufacturer scratching their heads as to how it arrived there.

The four-ounce U.S. Army Emergency Ration bar was manufactured by the Hershey Chocolate Corp. in June, 1937 and was apparently taken to Antarctica by the Third Byrd Antarctic Expedition of 1939-41. The expedition consisted of 59 men, 130 dogs, three aircraft, two light army tanks and two tractors. Although the scientists and dog drivers were civilian, the majority of the technicians came from the Army, Navy and Marine Corps.

The ration bar was discovered in January, 2001 by adventurer Douglas Stoup, a native of central Pennsylvania, after a 60-day, 730-mile ski journey to the Pole from Hercules Inlet. As Stoup, who lives in Marina del Rey, Calif., was checking on a cache of modern-day supplies near the runway at Amundsen-Scott Station, he uncovered the bar. Realizing that it was unusual, he pocketed it—and upon his return to the U.S. gave it to the Hershey Museum, where it is now on exhibit through Jan. 31, 2002.

The ration bar, according to Hershey, was developed in conjunction with Army Quartermaster Captain Paul Logan beginning in April 1937. The military's specifications, Capt. Logan told Hershey Chief Chemist Sam Hinkle, were straightforward.

The ration bars should be high in nutrients, highly portable and taste "just a little better than a boiled potato" to ensure that they were consumed only in case of emergency. Regular chocolate bars, in addition to being too tempting in taste, melted too readily. The original formula of the ration bar was altered slightly by the addition of thiamine hydrochloride (a source of Vitamin B1) to prevent beriberi, a disease likely to be encountered in the tropics.

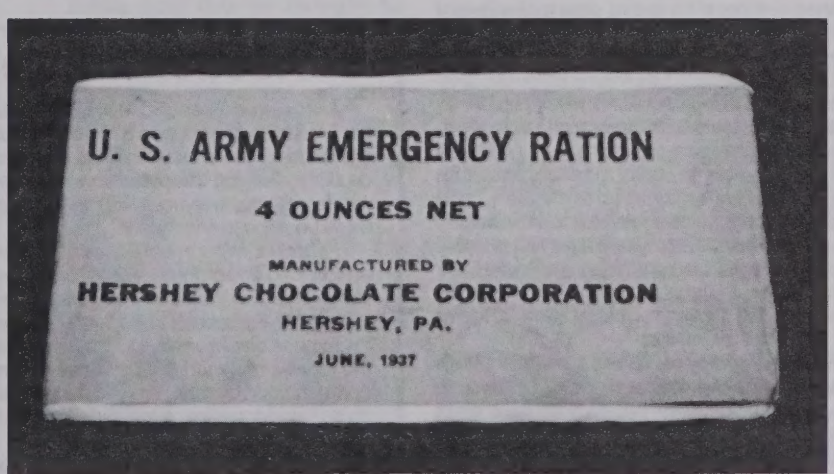
The bar found at the Pole is one of only 90,000 produced in June, 1937 as a test for Capt. Logan. Each four-ounce portion was weighed, kneaded, and pressed into a mold by hand, since the special heat-resistant chocolate didn't "flow" like the normal confection. These bars were originally called "Logan bars."

Following this test, mass production of the Field Ration 'D' bars familiar to veterans began later in 1937. Between 1940 and 1945, Hershey produced more than three billion ration units for distribution to American soldiers around the world.

Byrd's third expedition was the only one of the five he led that carried the 1937 ration bars to Antarctica. The admiral's first two expeditions carried regular chocolate bars, and his last two carried the mass-produced Field Ration 'D' bars.

But how the bar came to the South Pole is a mystery, since the third Byrd expedition did not reach the Pole by land. Some speculate that Dr. Paul Siple may have brought the bar to the Pole during his 1956-58 stay as scientific leader of Amundsen-Scott station.

Anyone with further information about the Ration Bar is asked to contact Ms. Amy Taber, public relations coordinator at Hershey, at *ataber@hersheymuseum.org* or telephone her at (717) 520-5590. ❑



Courtesy of the Hershey Museum

Umm...looks good enough to...uh...last another 70 years!

The waste issue is heating up in Antarctica . . .

Thaw puts hazards in the path of Scott's successors

***The Guardian on-line*, 17 Nov 2001, by Tim Radford**—It is as big as Europe and the mainland U.S. combined. It contains 90 percent of the planet's snow and ice. No human stepped ashore before the 20th century. Even now, its winter population is only about 200 people. And yet it has a pollution problem.

A report by a New Zealand government research agency published yesterday says the Antarctic seabed near McMurdo Sound is contaminated with untreated sewage and littered with dumped vehicles and tossed-away tins. In some places discarded beer cans outnumber the natural sponges that cling to life in the freezing polar waters.

"...you are seeing the emergence of things like, well, dog poo."

Antarctica is the most pristine continent on Earth. But close to research stations used continuously, in some cases, for almost 60 years, the scrapheaps have been piling high. The New Zealand researchers counted 15 vehicles, 26 shipping containers and 603 fuel drums among 1,000-odd items spread across 20 hectares (50 acres).

In the intense cold of the polar desert, nothing decays. Antarctica contains millions of years of snow piled thousands of metres above the bedrock but is an arid zone with less precipitation than the Sahara. What little does fall is covered by drifting snow or trapped in ice as it inches to the sea.

Whatever humans leave behind is also preserved. And that includes pony carcasses, lost snow gear, abandoned equipment, empty tins, food caches and that other great urban hazard, dog faeces.

Norwegian and other explorers introduced huskies, and the dogs left their marks in the snow.

"In the past, everything you put in the ice would have been buried, because the ice was getting thicker. Now the ice is getting thinner—perhaps due to global warming, we don't know—so you are seeing the emergence of things like, well, dog poo," said Alison George, a microbiologist with the British Antarctic Survey.

The latest alarm about the south polar environment arises from a clean-up campaign which began almost a 10 years ago, when the Antarctic Treaty nations agreed to a protocol to remove litter.

British scientists now put their tins and paper in plastic bags to be sent back on empty supply ships. Human effluent and washing-up water still go into the sea, but sewage treatment plants are on the way: the New Zealanders will open one at McMurdo Sound in January 2003.

The Australians have just announced a huge windpower station at their Mawson base, to cut down on the imported diesel and petrol which heats the research huts.

GUARDIAN ON-LINE

Part of the documented debris that is muddying Antarctic waters.

But the scientists do not want to take everything away.

Robert Falcon Scott and Ernest Shackleton first went to the Antarctic in 1902. The British Antarctic Survey began systematically examining the continent in 1944. The US, Russia, Argentina, Chile and a number of European and Asian nations all have bases there.

In the past 20 years there have been regular visits by tourist ships.

"We, like every other country, have been involved in the process of gradually removing all our waste material from the Antarctic," David Walton of the survey's environment division said.

"Everything we produce every year, on a continuous basis, is removed. And we are targeting the abandoned bases.

"But we aren't taking everything. They have become part of our history. We are restoring some of the old huts, to show visitors what things were once like." ❑

Antarctic sea floor 'littered with junk'

***Associated Press*, 17 November 2001, WELLINGTON, New Zealand**—Antartica's outwardly pristine seascapes are contaminated with untreated sewage, and parts of the seabed are littered with junk—from dumped vehicles to beer cans—a New Zealand report says.

The debris on the floor of the McMurdo Sound bay was documented Friday in the first state of the environment survey to be completed for any part of Antarctica.

In some stretches of the seabed, close to New Zealand and U.S. bases, discarded beer cans outnumber natural sponges.

Because its inhospitable temperatures discourage large-scale human habitation, Antarctica is widely regarded as one of the most unspoiled environments on Earth.

The report, by government research agency Antarctica New Zealand, describes the coastal and marine areas of the Ross Dependency as a "largely pristine region where... most significant impacts have been restricted to the immediate areas around scientific stations and smaller field camps."

It reveals a recent survey of Winter Quarters Bay near McMurdo Station documented 15 vehicles, 26 shipping containers and 603 drums among more than 1,000 items in a 20 hectare (49.4 acre) area.

The report said thousands of liters of untreated sewage pour each day into McMurdo Sound from the U.S. McMurdo Station base and nearby New Zealand Scott Base, where hundreds of researchers and support staff work during the Antarctic summer.

The area is contaminated with heavy metals, petroleum compounds and chemicals, the report said.

Antarctica New Zealand report project manager Emma Waterhouse said leaving the debris on the seabed eventually to be covered by bottom living fauna and sediment was the best option. Removing it would only release more contaminants into McMurdo Sound.

Sewage treatment plants at New Zealand and American bases in the Ross Sea region are expected to be installed by next year.

Arthur Brown of the U.S. National Science Foundation said a $2.3 million sewage treatment plant at McMurdo Station will be operating from January 2003. Antarctica New Zealand is working to a similar timetable.

The area has active volcanoes, ice-free areas with permanently frozen soils, and more than 4,000 kilometers (2,500 miles) of coastline. More than 10 million seabirds breed in the region. ❑

Australia unveils Antarctic cleanup

***Associated Press*, CANBERRA, Australia**—Australia announced a major cleanup operation at its main research base on Antarctica on Friday, saying the project should pave the way for nations to remove massive piles of garbage from the icy continent.

Federal Environment Minister Robert Hill announced an agreement between the Australian Antarctic Division and a French company to haul the waste back to Australia for disposal.

Experts believe up to 330,000 tons of waste, the legacy of decades of exploration and experimentation by more than 40 nations, is lying on and under the ice, contaminating one of the world's most pristine environments.

Hill called the agreement between Australia's Antarctic scientific research body and Vivendi, a French-based environmental services company, a commitment toward "protecting one of the world's most precious environments."

Under the agreement, Vivendi will provide 240 cargo containers to be filled with garbage and shipped back to Australia for disposal.

Once Australia's Casey station has been cleared of rubbish, the containers will be offered to other nations carrying out scientific research on the ice, Hill said.

Casey's tip is believed to hold up to 3,306 tons of garbage, including chemicals, batteries, oils and building materials dumped since 1965.

Other countries operating on Antarctica, including France and South Africa, have already launched cleanup operations at their bases. ❑

A Walk in the Sunlight

by Commander Jim Waldron, USNR (Retired)

In every life there are a few days so remarkable and so filled with beauty that they leave an impression that never fades. My short story covers such a day.

On October 31, 1956, the first aircraft landing at the South Pole was about to take place. Rear Admiral George Dufek USN had chosen Lieutenant Commander Conrad "Gus" Shinn and his flight crew to attempt the landing, an extraordinary undertaking since the South Pole was at nearly 10,000 feet above sea level, an altitude at which the aircraft engines of the R4D (C-47) aircraft would operate considerably below optimum power levels. In addition, supercold conditions were expected on the surface. (This assumption proved correct: upon landing, the thermometer read -58°F.)

Before the Admiral and his aircraft would depart from McMurdo, our aircraft—with Lieutenant Commander Edward Frankiewicz as aircraft commander—had to be positioned at the foot of the Liv Glacier, about halfway to the Pole. At the glacier, there was a small facility where fuel was stored and weather observations could be made. We were directed to land and be ready to act as a rescue aircraft for the polar flight.

When we departed from McMurdo, it was a gloriously beautiful day with clear skies, endless visibility and gentle winds. When we landed at the glacier, it was so cold that we decided to keep the engines turning, for fear that we would not be able to restart them. Lieutenant Commander Frankiewicz and I took turns sitting in the cockpit in order to monitor the idling engines.

After a short while we received a radio message from McMurdo advising that the Admiral's aircraft departure from McMurdo had been delayed as they waited for a better forecast of South Pole weather. Our alert condition was temporarily reduced, and we had a few hours to relax before we would be put on alert again.

Eddie Frankiewicz told me that he would like to walk toward the mountains, which seemed close enough that one could throw a rock and hit one. He asked if I would join him, saying that our crew chief could keep the engines turning while we were away.

Since there is very little moisture in the air on the Antarctic ice fields, objects appear to be much closer than they actually are; the mountains were further than the short walk we had thought. As we walked, the noise from the aircraft engines quickly diminished. The ice field absorbed sound completely and, if we stopped walking for a few moments, there was an utter silence, except for our breathing and the blood flow to our ears.

After about thirty minutes, Eddie said that he thought he should go back to the aircraft since there might be radio messages from McMurdo about our pending alert condition. The surface where we were walking was firm and there was no indication that I might get into difficulty if I continued, so Eddie started back, and I pressed onward.

It is a strange feeling to be as alone as I felt when Eddie disappeared in the distance. There I was on a strange barren ice cap with nobody in sight, 400 miles from my home base. The mountains were beautifully outlined ahead of me, but still appeared no closer than they had when I started the walk. There was no wind, and everything was deadly still. It occurred to me that perhaps no one had ever been at this spot before, though I later discovered that Dr. Larry Gould had made a geographic survey of the area in the 1930s. He told me that he was as impressed with the magnificence of the site as I had been.

Courtesy of J. Waldron

Cdr. Jim Waldron in early 1957

As I walked further toward the mountains, the surface turned suddenly from powdery snow to clear ice. As I walked cautiously over the ice, each step I made generated a small musical note. The ice was singing to me. I had never heard such a sound before, and I never have since. It was as though I were pressing on the keys to the high notes of an organ.

Ahead there was a rise in the surface, as a mound of solid rock rose above the ice like a small island. As I stepped upon it, I noted that the island contained a considerable number of rocks. I filled my pockets with some of these rocks as a souvenir of my walk in the sun on that beautiful day. Only one of these rocks remain in my possession today as I have given the rest away.

To myself I said, "I name this place Ruth Island." Ruth was my wife's first name. I didn't think much of it at the time but when I mentioned it in a letter home, I found that my wife was greatly pleased about having her name added to a geographic feature in Antarctica. Of course the naming was between the two of us and was nothing official.

Then I started back to the aircraft and rejoined the operation that was about to begin. As it turned out, we were not called on to make a rescue attempt, a fact about which I am very happy, for if the conditions were severe enough to stop one aircraft, they most likely would have been severe enough to stop two. ❑ *Commander Waldron can be reached at* jwaldron@aol.com.

Courtesy of J. Waldron

Silhouettes of Cdr. Eddie Frankiewicz and Cdr. Jim Waldron at Beardmore Station, Antarctica, near the Liv Glacier, in 1956. The obscurity is due to snow and ice being thrown up by one of the other R4Ds that was in the process of taking off for McMurdo. Once the snow and ice settled down, visibility again became unlimited.

PRNewswire

A minke whale reveals the white underside of its jaw as it pokes its head above the surface of the dark water

How the mighty have fallen . . .

Japanese gov't begins annual hunt in Southern Ocean Whale Sanctuary

***PRNewswire,* 6 Nov 2001, YARMOUTH PORT, Mass**—The Japanese whaling fleet has set sail for Antarctica to hunt hundreds of whales in the Southern Ocean Whale Sanctuary, the International Fund for Animal Welfare (IFAW—www.ifaw.org) announced today. Despite widespread international protests Japan plans to kill 400 whales.

IFAW today warned that despite growing international concern, Japan seems likely to take some 400 minke whales, ostensibly for "scientific research" under an International Whaling Commission (IWC) loophole which allows scientific, but not commercial whaling. Many consider Japan's practices disregard the spirit and intent of international agreements banning commercial whaling since 1986. The whale meat is sold in fish markets with choice cuts fetching a high price.

Japan last year expanded its hunt to include endangered Bryde's and sperm whales in a move that triggered environmental outrage and a renewed fear that Japan's true intent is a resumption of commercial whaling practices which brought many whale species to the brink of extinction.

At the July 2001 meeting of the IWC, Japan and Norway attempted to overturn the moratorium on commercial whaling. The meeting closed among fears that a vote-buying policy initiated by the Tokyo government was close to securing majority support for a resumption of full-scale commercial whaling.

Japan's Fisheries Ministry support for the whale hunt persists despite public opinion polling in Japan which reflects little support for commercial whaling and significant concern over its potential impact on Japan's image abroad. According to recent surveys, some 61% of Japanese have not eaten whale meat since childhood and a scant 1% claim they eat it once a month.

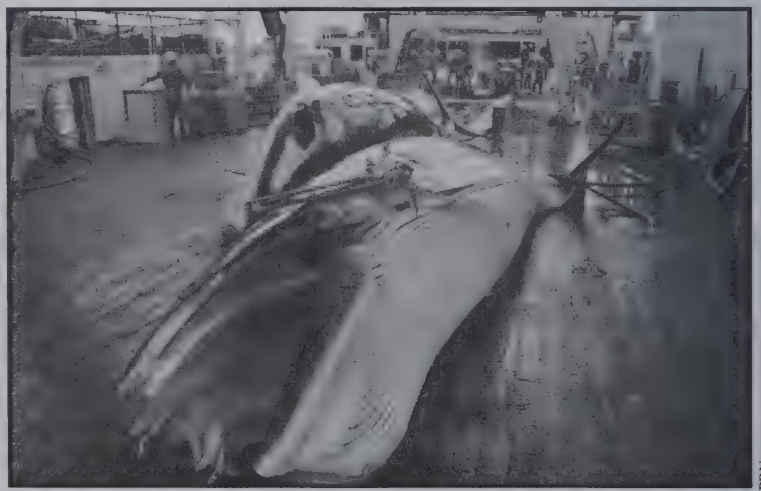
"Clearly the Japanese people do not consider whaling to be an integral part of their cultural heritage or even support it," said IFAW President Fred O'Regan. "Regardless, year after year Japan sends its whaling fleet into an internationally recognized sanctuary to kill whales. It is time for them to get with it and get out of the Southern Ocean Sanctuary." ❑

U.S. worried about whaling expedition

***Associated Press*, WASHINGTON**—The State Department expressed concern Friday about a Japanese expedition into Antarctic waters that is intended to take 440 Southern Hemisphere minke whales.

Spokesman Richard Boucher noted that the International Whaling Commission has said the minke whale population may have suffered a precipitous decline in that area over the past decade.

"The United States reiterates its strong support of the international community's call on Japan to cease its lethal research program in the Antarctic, especially in the Southern Ocean Sanctuary," Boucher said. ❑



PRNewswire

Minke whales are flensed aboard the Japanese factory ship **Nisshin Maru** *during a Japanese hunt in the Southern Ocean Sanctuary*

New hope for endangered African Penguins

***PRNewswire*, CAPE TOWN, South Africa, 30 Nov 2001**—Conservation groups today welcomed the final reimbursement of expenses incurred in emergency relief efforts following a major oil spill off Cape Town, South Africa last year. Local and international experts cited effective collaboration among the shipping company, insurers, and wildlife experts as the key factor in rescuing endangered African Penguins from the world's worst ever coastal bird disaster. This news comes as scientists report significant increases in breeding pairs for this endangered species.

20,000 penguins—40% of the world's remaining population—were covered with oil in June 2000 when the bulk carrier MV Treasure sank five miles off Cape Town. The spill occurred directly between the World Heritage Site of Robben Island and Dassen Island, affecting two of the three most important breeding colonies of the endangered penguins. Working with the Southern African Foundation for the Conservation of Coastal Birds, the International Fund for Animal Welfare (IFAW—www.ifaw.org)
launched a massive emergency relief effort, which ultimately involved some 100 wildlife experts from around the world and 12,000 South African volunteers. IFAW today announced the balance of its reimbursement claims had been processed and paid in less than nine months.

"This is the power of positive partnerships," said Sarah Scarth, Director of IFAW Emergency Relief. "From day one, Good Faith Shipping and their liability underwriters stood shoulder to shoulder with us in this emergency relief effort," she said.

Good Faith Shipping and its underwriters, Jonathan L. Jones and Ors (now managed by U.S.-based Markel), provided interim funding shortly following the spill. The underwriters made eight "without prejudice" advances to ensure financial support for the three-month rehabilitation effort.

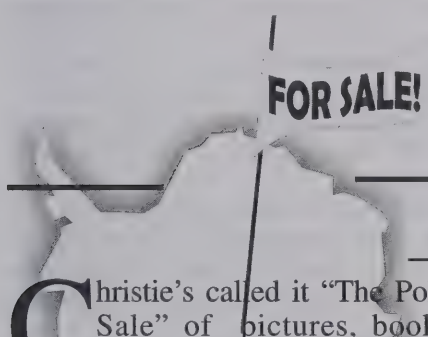
"There is no doubt our ability to respond quickly and decisively to this crisis was enhanced by their rapid release of funds," Scarth said. "The timely reimbursement of $US400,000 illustrates how collaboration between industry and responsible animal rescue efforts can prevent far more costly damages to wildlife and natural resources."

Johan Swart of Messrs Shepston & Wylie, the Cape Town based attorneys who managed the claim process for the insurers, said it was likely the MV Treasure oil spill settlement was the fastest ever in history.

"Good Faith Shipping, which does a lot of trade in South African waters, wanted to do the right thing and settle matters as quickly as possible—leaving behind an image, memory, and perspective of themselves as a properly responsible operator," said Swart.

IFAW's Emergency Relief Team was called on by SANCCOB to assist in the management of the Cape Town rehabilitation effort. By the time the last penguin was release on 18 October 2000, the response to the MV Treasure spill has been deemed the most successful oiled bird rehabilitation effort ever, with a mortality rate of just over 10%. Despite the loss of more than 2,000 penguins in the spill, a recent count revealed breeding pairs on Robben Island have increased 20% from 5,700 to 6,700 over the past 12 months.

IFAW's Emergency Relief (ER) Team is a hands-on disaster unit that responds to large scale oil spills and provides comprehensive assistance to countries and other wildlife organizations. Its members consist of world-class specialists in rehabilitation of oiled wildlife as well as logistics, bird management, veterinary services and financial support. ❑



Christie's conducts 'Polar Sale'

By Jeff Rubin

Christie's called it "The Polar Sale" of pictures, books, manuscripts, photographs and artifacts from the early years of Polar exploration—but the pole position was clearly held by the Antarctic. And of the draws from the Far South, none was stronger than the appeal of owning something connected with Shackleton's *Endurance* expedition of 1914-1917.

To mark the first sale held by Christie's that exclusively featured polar memorabilia, the London auction house produced a handsome, glossy 350-page catalog which, alone, cost $45.

The most important items—a manuscript diary kept by *Endurance* expedition surgeon Dr. Alexander Macklin ($152,178) and an archive of material collected by Dr. Macklin concerning Shackleton's final *Quest* expedition ($145,798)—were acquired by the Scott Polar Research Institute in Cambridge, England, thanks to a grant by the British government.

Of the ten Antarctic expeditions represented in the sale (including those from Sweden, Scotland, Germany, Norway and Britain), the clear favorite was *Endurance*. Even the tiniest bits of artifacts from that storied voyage—crumbled bits of a biscuit, scraps of a sail, stones from a beach—brought eye-opening prices.

A Shackleton family photograph album up for sale included a rare print developed on *Endurance* shortly before the ship sank on March 21, 1915, and carried by Shackleton from Ocean Camp to Elephant Island, aboard *James Caird* to South Georgia and on the hike across the island to Stromness whaling station. The print is stained from frequently being soaked on the 750-mile journey. The album sold for $22,149.

A cigarette tin containing the remains of a biscuit carried on the expedition brought $11,074, while a fragment of the mainsail of *James Caird*, measuring 2 inches by ½ inch and pinned to the head of a letter to Lady Shackleton, sold for $2,896. A collection of 12 small beach stones collected by Dr. Macklin from Elephant Island fetched $2,214.

Other Shackleton-related items also sold for high prices.

Two presentation copies of *Aurora Australis*, produced during Shackleton's *Nimrod* expedition in 1908, were also sold. Just 100 copies were published, and fewer than 70 are known to survive. The copy Shackleton gave his wife Emily sold for $51,113, while the copy he gave his daughter Cecily sold for $44,298.

Two six-inch splinters of wood—fragments from the sledge used by Shackleton on his Furthest South record journey during the *Nimrod* expedition—sold for $1,363.

Several of Shackleton's personal belongings were also sold, including a monogrammed blanket ($3.067), a white sweater ($5,452) and a fountain pen ($4,430). A collection of 84 checks signed by him sold for $16,185.

Of the other expeditions represented, Scott's *Discovery* expedition of 1901-1904, attracted the most interest.

A 100-year-old Cadbury's chocolate bar from the expedition sold for $682, while a very handsome pair of watercolors depicting "Sunrise" and "Sunset," painted by Dr. Edward Wilson and given to Shackleton, sold for $8,178. Another pair of Wilson's watercolors, painted on the same expedition, sold for $8,519.

The Arctic was represented by just 19 lots. An oil painting depicting the discovery of Greenland brought $30,668, the highest Arctic price. ❑

Fire destroys lab at UK station

by Jeff Rubin

British Antarctic Survey Photo

Fire destroyed the Bonner Laboratory at the British Antarctic Survey's Rothera station on the Antarctic Peninsula Sept. 28, 2001.

The building was evacuated and no one was injured.

Some of the station's 21 wintering personnel used a snow-blowing machine and a small fire engine to try to put out the fire—but darkness, snowdrifts and 75-knot gusts of wind made the efforts fruitless, and the state-of-the-art biological research lab was totally destroyed.

A huge explosion rocked the building during the fire as oxygen cylinders in the laboratory's SCUBA dive store exploded.

Rothera's accommodation facilities and associated buildings were not affected by the fire.

"This major damage to the laboratory will be a serious blow to our biological research program," said BAS Deputy Director Dr John Dudeney.

Named for eminent polar biologist Nigel Bonner, the Bonner Laboratory was opened in January 1997 and was the centre for biological research by BAS in the Antarctic Peninsula. It was equipped with sophisticated scientific instruments, a large flow-through seawater aquarium and a well-equipped SCUBA diving facility including a recompression chamber to support the sampling of animals in the nearshore marine environment. The building also housed a science library and meeting room, spacious offices and general laboratory space.

The cause of fire is under investigation and a complete clean-up of the site is planned. BAS is committed to replacing the £2 million facility. ❑

Melting glaciers diminished gulf stream, cooled western Europe, during last ice age

National Science Foundation—At the end of the last Ice Age—11.5 to 13 thousand years ago—the north Atlantic deep water circulation system that drives the Gulf Stream may have shut down because of melting glaciers that added freshwater into the north Atlantic Ocean over several hundred years, confirm researchers funded by the National Science Foundation (NSF)'s paleoclimate program.

"For the first time, we have shown that realistic additions of glacial meltwater into the north Atlantic would have shut down north Atlantic deep water production over a period of a few hundred years, if the initial ocean circulation was somewhat weaker than that of today," said David Rind, lead author of the study and a senior climate researcher at the NASA Goddard Institute for Space Studies. The study appears in the current issue of *Journal of Geophysical Research - Atmospheres.*

While the study finds that freshwater input could slow the Gulf Stream, it would not stop it entirely. That's because the stream is partially pushed by winds. As a result, the model shows the reduced Gulf Stream would transport only about half as much heat northward, thereby cooling western Europe.

"This discovery illustrates the importance of a systems approach to research-studying the interactions among land, ocean, and atmospheric processes-to understand the complex behavior of Earth's climate," said James Yoder, director of NSF's division of ocean sciences. "But we still have much to learn before we can explain the rapid climate changes that have apparently occurred over the past few thousand years, and what those changes can tell us about what may happen in the future."

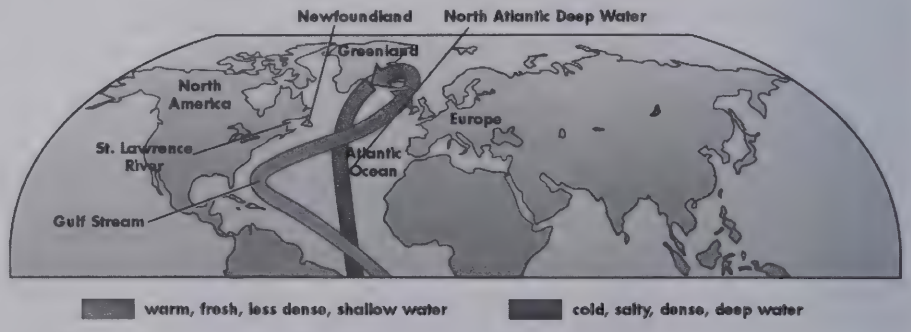
The computer model simulations of ocean and atmosphere processes used in this study imply that a similar phenomenon has the potential to occur in the future due to freshwater additions from increased rain and snow caused by global climate change.

When Rind and his colleagues entered into their model realistic estimates of freshwater from melting glaciers, they found the north Atlantic circulation stopped completely after some 300 years. When the model was adjusted to make the circulation weaker than it is today, cessation of the Gulf Stream took only 150-200 years, matching current estimates based on paleo-climate records.

When the Gulf Stream moves warm surface water from the equator north through the Atlantic, the water cools, gets saltier due to evaporation and becomes very dense. By the time it approaches the coast of Newfoundland, or further northeast in the Norwegian Sea, it becomes dense enough to sink. This process is called overturning. The dense water then slowly travels through the deep water southward into the Southern Hemisphere, with the return flow to the north occurring at the surface.

But when freshwater gets mixed with the salty water in the north Atlantic, it makes the water less dense and slows the overturning process and the ocean circulation. ❑

North Atlantic Ocean Circulation System



Courtesy of National Science Foundation

70South.com offers 'Antarcticles'

A website called 70south.com welcomes contributions from Antarcticophiles with news or information to share about the continent. The website is updated daily. Its address is http://www.70south.com.

70South.com is run by Brendon Grunewald of Brussels, Belgium, who in 1992-94 wintered at SANAE, the South African base in Antarctica, as a physicist studying auroras, ozone and the Earth's magnetic field. Grunewald also visited Germany's Georg von Neumayer station and Gough Island and has led a research expedition to Marion Island.

"Much of the educational content of the website is contributed by other people," says Grunewald. "Full credit is always given to any contributor, and we encourage anyone with relevant content to contribute it."

An extensive archive includes hundreds of "Antarcticles," as Grunewald calls them (see http://www.70south.com/news/list_all).

In addition to news and messages, the website includes a lengthy section of photos and descriptions of more than two dozen currently operating Antarctic stations. Seven Antarctic ships are similarly profiled. ❑ *by Jeff Rubin*

Old Glory at half mast over 90 South

by Jerry "Mac" Macala
Winter Site Manager, Amundsen-Scott South Pole Station

I took the [centerfold] photo the day we got the news here at Pole. It still makes me shiver thinking about the 3 a.m. call I got from comms and the story slowly unfolding that morning over LES-9, our "old reliable" satellite, the first to come up each day. I called an all-hands meeting at 8 a.m. By that time most of the station had already heard the news, and the reaction was universally a mixture of shock and disbelief.

The news dealt a hard blow to all of us. One of the great things about wintering is that few happenings in the outside world have much impact here. The isolation usually provides a great deal of comfort, but it's not possible to escape the impact of what happened Sept. 11. It wasn't just a crime against the United States, it was a crime against humanity. As such it is difficult to comprehend and come to terms with, but time will help.

At about 9 a.m., comms tech Jeff Kietzmann and senior comms tech Dave McDonald went up on top of the dome to lower the flag to half mast. I suppose this gesture was our way of coping with our feelings of powerlessness and "taking control" of the situation.

The sun was creeping up on the horizon but had not quite peeked over yet. It seemed quite bright outside, like an hour before sunrise Stateside. Of course, brightness definitely becomes relative after several months without any sun at all. There were no stars or aurora in the sky. The blowing snow and overcast skies added to the overall dreariness of the morning.

The temperature was unusually warm, approximately minus 38°F, compared to the minus 80°F that is usual at this time of year. But the winds were up around 15 knots, and the cold was as biting as always.

I was the only one I know of who went outside to see the flag. Everyone seemed to be in a daze as the reality of the news sunk in. I gave the crew a work-optional day. Folks have different ways of coping with bad news, and I wanted to make sure everyone had the opportunity to do it their own way.

We are all concerned about our friends and family in the States, who suddenly seemed more vulnerable to harm then we have ever been on this frozen plateau at the bottom of the world.

A year on the ice has had a profound effect on me and most of the rest of the crew here. It certainly puts a lot of things in perspective. I wish more people could experience it and understand how fragile life is and how we need to depend on each other. ❑

Centerfold photo: ***NSF/USAP photo by Jerry Macala, Raytheon Polar Services Company***

Antarctic flights get security boost

AAP, 16 Oct 2001—The United States has increased security at its Antarctic-supply bases in New Zealand amid concerns the annual summer gathering of scientists might become a terrorist target.

The United States Antarctic Program (USAP) maintains a large base at Christchurch International Airport, servicing its McMurdo Sounds outpost, the largest in Antarctica.

Extra civilian guard posts have been set up around the airport base and all unauthorised car parking in the area outlawed.

US Air National Guard personnel stationed at the Antarctic Centre have been relocated to watch over two C-141 Starlifters, which provide the logistics backbone to the summer flights.

About 3,000 scientists and support staff will head to the ice this summer, with Italian, French and New Zealand workers accompanying the large American contingent.

USAP spokesman Art Brown confirmed "a sprinkling of scientists" had left Christchurch on a flight today to Antarctica.

He agreed that the scientists leaving for Antarctica in the next few weeks could become targets for anti-American extremists.

"There is certainly a heightened awareness on the part of all Americans," Brown said.

"The world has changed and we are changing in response to it. We felt that we had to take security measures rather rapidly."

All Antarctic passengers will be subjected to the same security measures as commercial air travellers at New Zealand airports.

Baggage will be searched and X-rayed by customs staff at the passenger departure terminal in the International Antarctic Centre.

A security assessment of the US base had been launched long before the terrorist attacks in New York and Washington to meet legal requirements to safeguard American citizens working offshore.

However, the security measures were fast-tracked after the September 11 strikes. ❑

Panel taking stock of Alaska's ocean health

Reuters, **ANCHORAGE, 28 September 2001, by Yereth Rosen**—Environmental strains ripple on the oceans that border Alaska. In rural stretches of the state, global warming has thinned Arctic pack ice, making travel dangerous for Native hunters. Traces of industrial pollution from distant continents is showing up in the fat of Alaska's marine wildlife and in the breast milk of Native mothers who eat a traditional diet that includes such items as seal and walrus meat. The population of sea lions, fur seals, sea otters and varieties of sea birds has plummeted for reasons yet undetermined by scientists. And fishery managers in Anchorage, though more successful than their counterparts elsewhere in the nation, are still struggling to reduce the millions of pounds of species that are accidentally harvested, then thrown away, by commercial fishermen. Although Alaska is far from the polluted shorelines of southern industrial centers and the decimated fisheries off the New England coast, even its waters are affected by environmental strains, a private, non-profit organization has discovered.

The Pew Oceans Commission, an independent group of marine experts, political leaders and academicians, heard Alaska's concerns about marine health during a stop here on a national tour. The commission, formed by the Pew Charitable Trusts and based in the Washington, D.C. area, is gathering information from around the nation's coastal regions for a report due to Congress next year on recommended ocean policies.

Cutbacks in seafood harvests

The report will cover the general issues of pollution, coastal development, fisheries management and governance. The panel already traveled to Maine, South Carolina, Hawaii and California, is headed next to Portland, Ore. At all stops, overfishing has been a major concern, said Justin Kenney, spokesman for the panel. "Everywhere we've gone, we've heard about the current status of fishery management," Kenney said during a week-long visit to Alaska. Drastic cutbacks in seafood harvests are not necessarily the answer, but the oceans do need a new harvest system that encourages better conservation, said commission member Eileen Claussen. "All the incentives are set up so they want to take everything now," said Claussen, a former assistant secretary of state for oceans, environment and science.

The stint in Alaska included a boat tour of Kenai Fjords National Park near Seward—where commission members got glimpses of the endangered sea lions sunning themselves on rocks—and public hearings in Anchorage and Kodiak. Alaska's fisheries are much healthier than those elsewhere in the nation, and managers here have tried to avoid the mistakes that led to collapses in places like New England, Dave Benton, chairman of the Anchorage-based North Pacific Fishery Management Council, told the commission at the Anchorage hearing. "The reason our council works is we have some basic ground rules. We don't overrule our scientists, for example," he said. Still, Benton said, managers need a better system to reduce what is called "bycatch," or taking in unwanted fish. "We've made a lot of progress but there's still a lot that needs to be done," he said.

"The Pacific Islanders are the last people in the world to contribute to global warming, and we'll be the first to feel the effects of it. There's something very unfair about that."

Global warming and the ensuing climate change is also considered a growing problem in Alaska. Some blame it for the precipitous declines in the Alaska sea lion population and for declines of other marine mammals in the Bering Sea and Gulf of Alaska. Around his Lower Yukon River village of Marshall, global warming is believed to have contributed to deaths, said George Owletuck, a Yupik Eskimo and member of the Alaska Oceans Network. Some villagers traveling by snowmobile have fallen through the thinner-than-normal river ice and drowned, Owletuck told the commission at the Anchorage hearing.

The concern is echoed by Carlotta Leon Guerrero, a commission member and former legislator from Guam. She fears for the flat South Pacific atolls that could disappear if water levels rise substantially. Islanders face the possibly of losing their homes, she said.

"The Pacific Islanders are the last people in the world to contribute to global warming, and we'll be the first to feel the effects of it. There's something very unfair about that," she said.

Alaska has set an example for curbing one source of marine pollution, said the state's governor, Tony Knowles, who is also a Pew Oceans Commission member. This year Alaska became the first U.S. state to regulate water pollution from cruise ships, which can carry 2,000 to 3,000 people and are sometimes likened here to floating cities. Alaska's efforts have won attention from other cruise destinations, including those in the South Pacific, Guerrero said. Those islands have become attractive to the cruise companies, which are seeking exotic new destinations to satisfy a growing market, she said. "You've got to pay attention to their discharges. You've got to pay attention to the way they conduct themselves in your waters," she said. "It's not as clean an industry as it appears to be." Other governments have yet to follow through with regulations similar to those in Alaska. Still, Knowles said, the other cruise destinations will benefit from Alaska's laws because the major cruise lines are upgrading waste-water technology to comply. "Once you've got the technolog y in place and working, it goes where they go," the governor said. ❑ ***(cb Billy-Ace Baker)***

Graham Rowley: APS member's career noted

Graham Rowley's long career and contributions to Arctic archaeology were saluted in an article by Graham Hughes in the *Ottawa Citizen* (26 Dec. 2000, p. A5). Mr. Rowley's career began when he left England in 1936 to join the British Canadian Arctic Expedition. That multi-year expedition in the late 1930s allowed Mr. Rowley to live as one the last participants in traditional Baffin Island Inuit lifestyles between 1936 and 1939. He returned to Britain as a Canadian Army officer in 1939. After the war ended, Rowley resumed pursuit of scientific interests in Canada, where he worked with the Department of Indian Affairs and Northern Development. After retiring from government service, Rowley held a research professorship in northern and native studies at Carleton University. Mr. Rowley, an Honorary Member of the American Polar Society, authored *Cold Comfort* (McGill-Queens University Press, 1996), a record, in part, of his early experiences among the Inuit of Baffin Island. The *Ottawa Citizen* article printed an extensive excerpt from the book to illustrate the celebration of Christmas by Baffin Inuit in 1938-39. ❑ ***(cb Brian Shoemaker)***

Signs of early Arctic humans mystify scientists

The Sept. 6, 2001, issue of the journal *Nature* reported discovery of a human campsite on the Arctic Circle that was occupied more than 35 000 years ago, if carbon dates are believable. A joint Norwegian-Russian team began excavating a site in western Russia on the Usa River in 1993, known as Mamontovaya Kurya. Roughly, the name of this site means, "bend in the river where mammoth bones appear." Archaeologists and geologists know from experience that accumulations of bones can indicate the presence of human hunters at a site. Seven years of toil rewarded this team with a mammoth tusk bearing human-caused chop marks, and crude stone artifacts including a hide-scraper and a blade.

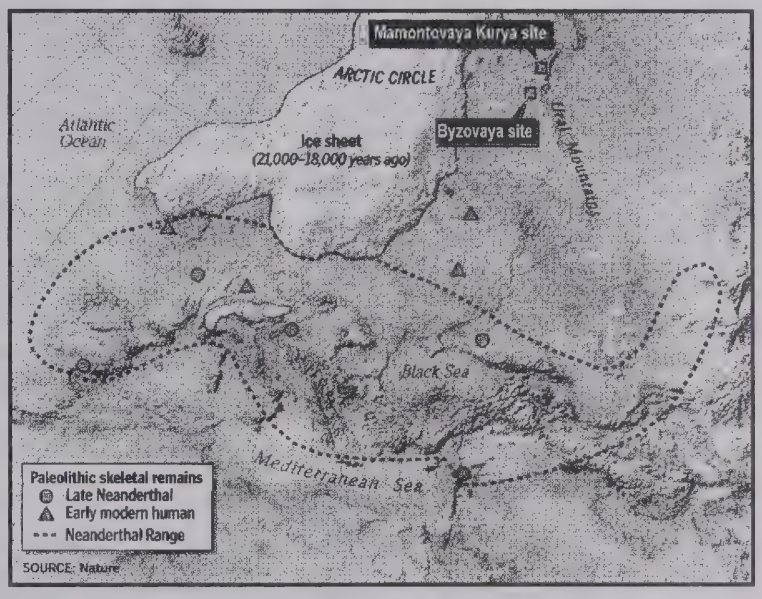
Within a week of the *Nature* article, questions besieged three team members: Jan Mangerud and John Inge Svendsen of the University of Bergen, and Pavel Pavlov of the Russian Academy of Sciences. Announcement of their findings of 123 bones of ice age mammals and seven stone artifacts at Mamontovaya Kurya touched off a flurry of questions addressing three mysteries:

1) How could, or why did, humans appear so quickly in the Eurasian Arctic—as much as 20,000 years earlier than previously documented?

2) What human type were these hunters—modern humans or Neanderthals?

3) Might the riverbank campsite have been much more recent, because the date of 36,000 years represents bones that the river uncovered and re-deposited thousands of years after the animals actually lived and died?

The investigators were reluctant to over-interpret their findings. Prior to their discovery, evidence indicated that modern humans—our ancestors—were just arriving at the southeastern approaches to western Europe about 30,000-40,000 years ago. It was thought that the earliest modern humans came into contact (or perhaps conflict) with Neanderthal forms—arguably, not our ancestors—as they moved north and westward. Prof. Erik Trinkaus of Washington University in St. Louis MO commented on the paradox. Finding either Neanderthals or modern humans so early so far north in an inhospitable climate is a surprise: either resident Neanderthals were more technologically astute than many believed, or arriving moderns colonized the north faster than previously thought.



In the absence of human skeletal remains, the Mamontovaya Kurya site cannot shed light on the type of humans who camped there. Neanderthals are absent from material dated younger than 28,000 years ago, although why they vanished remains a topic of heated debate. Trinkaus, for example, believes that Neanderthals were socially and technologically more capable than in our depictions of "brutish cavemen," and that their disappearance after a reign of 100,000 years was the result of peaceful interbreeding with modern humans at the end of the ice age. Trinkaus, however, recommends further evidence to persuade scientists that the river has not tricked us into believing that the campsite is older than its real age. ❑ ***(cb Peter Barretta, Jr., Nathan J. Frank, and Brian Shoemaker)***

(Based on Guy Guglitotta,* Washington Post, *10 Sept. 2001: "Arctic river banks fuels an early human mystery," p. A9; and Thomas Hayden,* U.S. News & World Report, *17 Sept. 2001, "The real 'survivor,'" p. 85)

Phony account presents false view of Eskimo life

***Associated Press,* CHICAGO, 22 August 2001, by Lindsey Tanner**—The distinguished *Journal of the American Medical Association* (JAMA) says it was duped into publishing a medical student's phony account of an elderly Alaskan villager walking out onto the frozen Arctic Ocean to commit suicide.

Shetal I. Shah had presented his bleak essay, published last October, as factual. But in a letter in Wednesday's JAMA, Shah's former supervisor said that there was no such suicide victim and that the story perpetuates a myth about a tradition that does not exist. Shah's account was published as one of JAMA's "A Piece of My Mind" columns, in which doctors detail the emotional side of medicine. Shah described a proud, toothless 97-year-old patient at a remote Alaskan medical clinic where Shah worked briefly. The man, a member of a Siberian Yupik village, came to say goodbye before vanishing "into the early morning fog," Shah wrote. In a letter in Wednesday's journal, Shah defended the essay, saying it was based on stories he had been told by residents during his stay. He said he created the tale to highlight pertinent "end-of-life issues."

In some Arctic cultures, elders sometimes voluntarily froze to death on the ice in times of village hardship, said Ernest Burch, an anthropologist affiliated with the Smithsonian Institution. But that was a 19th-century custom that no longer exists, Burch said.

Shah's former supervisor, Dr. Michael Swenson, a physician with Norton Sound Health Corp. in Nome, said the story presents a hurtful stereotype about current Yupik society, where despair among the elderly is far less common than among urban cultures. Swenson said he understands Shah "wanting to 'tweak' his description of the events a little to make it a better story. But Shah's story goes beyond such editorial adjustments: The events described in his story never happened."

The journal's editors said that Shah presented the essay as fact. ❑ ***(cb Billy-Ace Baker)***

Arctic Oil and Gas Digest

Editor's Note: A disproportionate number of polar news stories this year concerned arctic petroleum—drilling for it, transporting it, its economic and strategic significance, and its threats to the environment—so that doing justice to these topics outstripped the normal practices of Polar Times. *Moreover, arctic oil and gas issues in the past 12 months have turned into critical fulcrum points in partisan politics, public policy development, and international relations. Accordingly, the editors decided to experiment with the following condensed chronicle, designed to thread together the large volume of arctic oil and gas information. Readers' reactions to this "digest" approach are welcomed.*

Arctic National Wildlife Refuge

January: Once the outcome of the 2000 U.S. presidential election became known, news media focused on the new administration's cabinet appointments and on how Congress would deal with the issue of expanded drilling on the Arctic coast of Alaska. Yereth Rosen filed a story (*Reuters*, 23 Jan 2001, "Alaska's Spreading Oil Fields Under New Scrutiny") that laid out the assignment facing the National Research Council (NRC) committee of 16 scientists who had been charged with reporting on cumulative impacts from petroleum development within 18 months of committee formation. The NRC committee had just held its first meeting to take testimony in Anchorage and was due to tour Alaska's arctic oilfields in warmer months. ❑ *(cb Billy-Ace Baker)*

February: A few weeks after the inauguration of President Bush, *Time Magazine* published a summary analysis of Arctic National Wildlife Refuge (ANWR) issues written by Terry McCarthy (19 Feb 2001, "War over arctic oil," pp. 24-29). Candidates Bush and Gore sharply differed on whether drilling should be allowed within the (ANWR). The Bush administration, a plurality of Alaska voters, the Iñupiat Eskimos of the North Slope Borough, Republicans in Congress and the petroleum industry favored development. Opponents to ANWR development included a majority of Americans polled, Democrats in Congress, (who followed the lead of the Gore campaign and the administrations of Presidents Clinton and Carter), the Gwich'in-Athabaskan villagers whose livelihood depends on the Porcupine Caribou Herd, and the environmentalist community. In an inset to the main article, Adam Zagorin addressed the uncertain quantity of oil beneath the tundra of ANWR and how many years it would take to explore, develop and move ANWR oil to solve the energy crisis of the month. In February, California's shortage of electricity-generating capacity was front-page news. Proponents of ANWR drilling touted the importance of Arctic oil and gas to solving such energy crises, while opponents pointed out that it would take 10 years for any ANWR oil or gas to reach consumers. ❑ *(cb Pete Anderson)*

As early as February 2001, an updated order of battle over ANWR petroleum drilling was drawn up for skirmishes taking place from Washington, D.C., to Alaska. Senate Republicans drafted a bill designed to create an administration-backed energy policy. It was referred to the Senate Energy Committee. Because the bill explicitly opened the door to drilling on the Coastal Plain of ANWR, former President Jimmy Carter decided actively to oppose that clause in the bill (H. Josef Hebert, *Associated Press*, 28 Feb 2001, "Carter to protect Arctic from drilling"). Visits to northern Alaska had brought Mr. Carter into contact with caribou herds on the Arctic Coastal Plain, which in turn had moved him to liken the ANWR to Yosemite as a national treasure. Carter justified his opposition to opening ANWR by tracing the historic intent of legislative and executive actions concerning the Refuge, dating from its establishment under the Eisenhower administration in 1960 through his own signing of the Alaska National Interest Lands Conservation Act in 1980. Further, he dismissed as unpersuasive proponents' rhetoric that linked ANWR drilling to solving the California electricity crisis. Carter nevertheless admitted his own anxieties over the chances of preventing drilling in ANWR. Avowed Congressional opponents and proponents ANWR drilling have long been nearly evenly divided. If the White House were to decide to abandon other priorities to focus on ANWR drilling, "I know from experience... the president... can be very persuasive," Carter said. ❑ *(cb Billy-Ace Baker)*

March: VIP visitors had begun trekking to Alaska and to ANWR itself. Interior Secretary Gale Norton and a troupe of senators and aides swept through Anchorage, Kaktovik, Barrow, Fairbanks and Valdez, on their way to and from the Refuge (Yereth Rosen, *Reuters*, 30 March 2001, "Interior Secretary, Senators to tour Arctic Refuge.") The group's unsubtle mission was to drum up support for the new administration's intent to open ANWR to drilling. Although the Secretary and the senators did not schedule any sessions with environmental groups during this trip, critics of ANWR drilling used the occasion to voice objections to the trip itself. Allen Smith of the Wilderness Society's Alaska office charged that the Secretary's trip had been arranged for March-April to create the impression that ANWR was bleak. Sen. Frank Murkowski, R-Alaska, countered that environmental groups and media focus on images of the Refuge during the couple of snow-free months of the year, so his office arranged to expose the Secretary to the Refuge under more representative (winter) conditions. ❑ *(cb Billy-Ace Baker)*

April: Media attention on ANWR generated some thoughtful news analyses. Yereth Rosen (*Reuters*, 16 April 2001, "Arctic drilling debate splits Alaska Natives") examined the contrasting views of North Slope Iñupiat Eskimos (proponents of ANWR drilling) and those of the Gwich'in Athabaskans of northern interior Alaska and northwestern Yukon and Northwest territories of Canada (opponents of ANWR drilling). The maritime and whaling subsistence lifestyle of the Iñupiat leads them to fear drilling and development of petroleum resources from beneath submerged lands of the continental shelf as a threat to their very existence. To the Iñupiat, land-based development of petroleum is the lesser of two evils. Land-based oil and gas development within living memory has supported Iñupiat by giving their municipal government a tax base from which to undertake public works. Interior Gwich'in Athabaskans, by contrast, rely as heavily on the caribou of the Porcupine Herd as the Iñupiat do on the bowhead whale. They are as eager to prevent on-land drilling that might impede caribou movements as the Iñupiat are to prevent offshore drilling that might impede bowhead whale migration. ❑ *(cb Billy-Ace Baker)*

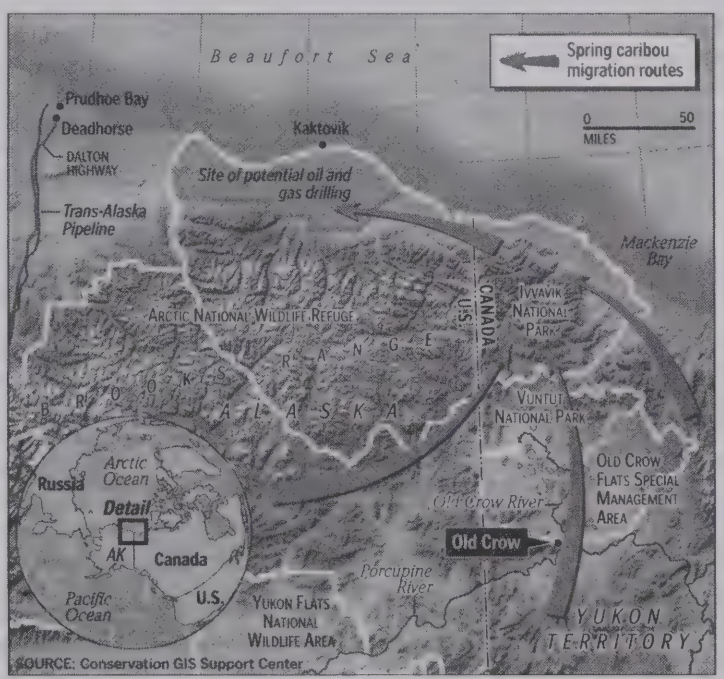
July: In late summer, the Teamsters' Union announced its support of ANWR drilling provisions in the then-Republican-flavored Senate energy bill (Leigh Strope, *Associated Press*, 30 July 2001, "Teamsters Support Oil Exploration"). The union undertook to run broadcast and print media ads in support of ANWR development. The union's support was based on the expectation that 75,000 union jobs would be created through ANWR development, some 40,000 of those in the states of Pennsylvania and West Virginia. Vice President Dick Cheney was credited with touting job creation earlier this summer in conversations with Teamsters representatives. Relations between the Teamsters' Union and the Bush administration have been strained. Team-

sters had supported the candidacy of former Vice President Al Gore in the 2000 presidential election. The union continued to lobby against the Bush administration's plans to open the U.S. border next year to Mexican trucks and truckers under provisions of the North American Free Trade Act. Positions taken by the Teamsters on issues are therefore closely watched and the union's support courted when possible by this administration. ❑ *(cb Billy-Ace Baker)*

AUGUST: The Republican-led U.S. House of Representatives passed a bill at the beginning of August that provided for drilling in ANWR. Canada reacted with concern to this development (David Ljunggren, *Reuters*, 2 August 2001, "Canada regrets U.S. vote on oil drilling in Arctic"). Spokesmen for the Canadian Minister of the Environment and for the official opposition party, the Canadian Alliance, were in rare agreement that Ottawa should insist on joint U.S.-Canadian hearings before any drilling is allowed to proceed on the Refuge. Canada's strongest objection to ANWR drilling hinges on the well-being of the Porcupine Caribou Herd, which routinely crosses the Alaska-Canada border and annually produces its calves on the Alaska side in the coastal plain, where proposed drilling would be allowed. ❑ *(cb Billy-Ace Baker)*

About a month after the House of Representatives vote, the Senate Energy Committee seemed close to approving the energy bill with the Bush administration's provision for ANWR drilling. Committee deliberations were scheduled to resume and conclude during the second week in September (Tom Doggett, *Reuters*, 29 Aug 2001, "Bush close to Senate panel win for Alaska drilling-survey"). Despite the Senate's shift from Republican to Democratic control and committee leaderships earlier in the summer, a couple of Energy Committee Democrats were inclined to defect to the Republicans' view, favoring drilling in ANWR as a showdown committee vote approached. James Hoffa, head of the Teamsters Union, planned a heavy Senate lobbying effort in favor of the ANWR drilling provision, in the (revised) expectation of the creation of "at least 25,000 jobs." After being voted out of committee, however, the full Senate was expected to engage in lengthy debate over the energy bill. Several Democratic Senators were quoted as vowing to filibuster any energy bill that opened the Arctic Refuge to drilling. On the other side, Sen. Ted Stevens, R-Alaska, vowed with equal determination to block any bill that fails to provide for drilling in the refuge. ❑ *(cb Billy-Ace Baker)*

SEPTEMBER: Just after Labor Day, Sen. Jeff Bingaman, D-N.M., chairman of the Senate Energy Committee, outlined a draft energy bill that omitted provisions for ANWR drilling. The Democrats' deletion of ANWR may have been a trial balloon—or a tactic to focus attention on other, less headline-grabbing, clauses of the Senate Energy Bill. An article (H. Josef Hebert, *Associated Press*, 6 Sept 2001, "Energy Bill doesn't mention Arctic") enumerates some of these other sections in the draft Senate bill. These clauses include streamlining of regulatory approval for a $12.6-billion pipeline through Alaska to carry vast reserves of Arctic natural gas to market, greater federal regulatory authority over electricity grids, encouragement of renewable energy research, and a restoration of mandatory 30% improvements in the energy efficiency of air conditioning units. ❑ *(cb Billy-Ace Baker)*



by Gene Thorp, the Washington Post

The last ANWR news analysis pre-dating the Sept. 11 terrorist attacks focused on the bewilderment among Canadian Gwich'in living in Old Crow over U.S. intentions to allow oil and gas drilling in the calving grounds of the Porcupine caribou Herd. DeNeen L. Brown *(Washington Post*, 10 Sept 2001, "The caribou and our people are one," pp. A13-A14) explored the subsistence traditions and thoughts of Old Crow residents in the context of the U.S. Congressional Energy Bill and ANWR drilling issues. According to Gwich'in lore, hunters should never pursue Porcupine caribou to their calving grounds on the Arctic coast, even in times of human famine, because the Porcupine Herd renews itself on the coastal plain within what is now ANWR in Alaska. Gwich'in First Nations chief Joe Linklater compared the community's dependence on caribou to that of plains Indians of the 19th century upon the plains bison. He imagines that if the caribou die, the Gwich'in way of life dies. Linklater also suggested a biological explanation for the Porcupine Herd's tendency to calve on the Arctic Coastal Plain in Alaska, in that the animals face fewer pressures there. They (pregnant female caribou) escape much of the harassment by wolverines, bears, wolves, and even curious biologists, by leaving the boreal forest for the Arctic coastal tundra at calving time each spring. In the view of Sandra Newman, a town councilor, the solution to U.S. energy problems is to cut use rates. "In the States, there are millions and millions of cars going in all directions. I'm not surprised the U.S. is running out of fuel and energy. They use too much. They talk about an energy shortage in California. But if you go one state over, the whole city of Las Vegas is lit up. Couldn't Las Vegas cut off its lights and share with California?" ❑ *(cb Peter Baretta, Jr.)*

Following the terrorism of Sept. 11, there was a brief hiatus in ANWR news. When ANWR did resurface in public attention, it had been connected to a new and urgent proposal to expedite approval of drilling for U.S. national security and defense considerations. Tom Doggett and Chris Baltimore (*Reuters*, 21 Sept 2001, "US defense bill may be used for Alaska drilling") reported on the tactic proposed by Sen. James Inhofe, R-Oklahoma, to sidestep the Senate Energy Committee, by attaching ANWR drilling approval to a defense appropriations bill. Inhofe illustrated the impatience of some legislators and the administration over the deliberate pace of the Senate Energy Committee. Some proponents of drilling express concern that time is running out on the Senate to pass a comprehensive energy bill be-

(CONTD NEXT PAGE)

fore adjournment (then scheduled for the end of October 2001). Reaction to the Inhofe proposal was swift. Negative reactions came predictably from environmentalists, who deplored the association of ANWR drilling with the terrorism crisis. As in other arenas of debate, the lag of 5 to 10 years between discovery and commercial production of Arctic petroleum resources was raised in objection to this coupling of domestic oil to the containment of international terrorism. More surprising, Sen. Frank Murkowski, R-AK, opposed Sen. Inhofe's initiative to hitch the issue to defense appropriations. Regarded as the Senate's senior backer of ANWR drilling, Murkowski believes the issue should be fully and calmly debated in the normal course of Senate business. He labeled it "poor taste" to use the previous week's attacks as an opportunity to open ANWR to drilling through a defense appropriations bill. ❑ *(cb Billy-Ace Baker)*

Canada remained apprehensive about accelerated and unilateral U.S. actions affecting ANWR. David Ljunggren (*Reuters*, 24 Sept 2001, "Canada urges against hasty U.S. move on Arctic oil") reported on the misgivings expressed by two Canadian Ministries over the legislative tactics proposed in the U.S. Senate by Sen. Inhofe earlier in the week. Canadian Environment Minister David Anderson stressed the importance of considering long-term strategic objectives in protection of the shared international wildlife resources that straddle the Alaska-Canada border—especially in times of crisis. Minister of Energy Ralph Goodale cited a number of alternative North American solutions to any energy security crises, including Canada's immense Alberta Tar Sands. Anderson cited currently falling fuel prices as evidence that no energy security crisis existed and added that oil from ANWR, even if drilled, could not possibly come on line for a number of years. ❑ *(cb Billy-Ace Baker)*

October: Pronouncements by the U.S. executive branch of government since September seem likely nevertheless to perpetuate anxieties among allies and critics. *Reuters* reported briefly from Stanford University (18 Oct 2001, "Attacks show need for Alaska oil—U.S. official") Energy Secretary Spencer Abraham's quest for support of a plan to fast-track new oil development in Alaska. As a result of Sept. 11, "the issue of energy security is now clearly before us," he said. Although Abraham made only fleeting mention of ANWR, his intent was clear in the following: "ANWR will not eliminate our dependence on foreign oil, but it will help us." Although the amount of oil that could be produced from the refuge is disputed, Abraham said average estimates were that it could replace oil imports from the Persian Gulf region for 10 years or from Iraq for 50 years. ❑ *(cb Billy-Ace Baker)*

Editor's Note: By early November, the administration and the Democrat-chaired Senate Energy Committee had arrived at an impasse over the energy bill because of deep differences on drilling in, vs. protection of, ANWR. Committee Chairman Dingaman had promised to deliver a comprehensive energy bill by the end of the year, but not a clause enabling ANWR drilling. The White House was prepared to insist that ANWR drilling be a part of any bill and prepared to link ANWR development to security issues the administration considers essential to its war on terrorism.)

Pipelines and Offshore Oil, contd.

Editor's Note: Although ANWR at times seemed to be the only newsworthy item connected with Arctic petroleum, to the point that followers of ANWR events might be forgiven thinking that oil development was something new in the Arctic, many other oil patch news items were generated in 2001. At the beginning of the year, inflated natural gas prices, highlighted by California's electricity shortfall, led observers to expect petroleum companies finally to consider sending Arctic natural gas southward to markets. Movement on this question would end a quarter century of inaction, during which economics dictated that natural gas reserves be ignored or, in the case of Prudhoe Bay, reinjected into oil-bearing structures to pressurize the field. Two gas pipeline routes were the leading—and competing—candidates for moving vast natural gas resources, southward from Alaska's Prudhoe Bay region and Canada's Mackenzie River Delta, to populous latitudes. In other pipeline news, the Trans-Alaska (oil) Pipeline System (TAPS), after nearly 25 years of operation, was up for permit renewal review when an isolated act of vandalism highlighted security and operational concerns over the system. Finally, British Petroleum's Northstar Project was nearing production by the end of 2001. The most closely watched feature of that offshore oil production platform was its sub-seafloor pipeline that brings oil 10 km (6 mi) to shore, where it will feed into the flow of oil gathered for the Trans-Alaska Pipeline System. The submerged acreage upon which the Northstar Project drilled production wells was leased under a U.S. federal initiative known as Project (energy) Independence to speed production of petroleum from federal Outer Continental Shelf (OCS) lands, those by definition lying more than three statute miles seaward of the mainland of coastal states. The Northstar Project will produce the first oil from Alaska OCS acreage. Such offshore federal acreage was first offered for competitive lease bidding in 1976, a year before the first Prudhoe Bay oil began its journey to markets through the TAPS line.)

Natural gas pipeline initiatives

As energy and security questions moved to the front burner in the wake of the terrorist attacks in September, hearings to consider transportation to market of Alaska natural gas were requested by Sen. Frank Murkowski, R-Alaska (*Reuters*, 19 Sept 2001, "U.S. Senate panel may review Alaska natgas pipeline"). Committee Chairman Jeff Bingaman, D-N.M. supports exploitation of Arctic natural gas and agreed to try to schedule the hearings in early October, when his Senate Energy Committee was due to resume debate and hearings on a comprehensive energy bill. The Bush administration has supported building a gas pipeline, under the caveat that it must be economically feasible with private funding. Natural gas from Alaska could make up 10 percent of North America's energy supplies by 2015, according to a study released in July by the Interstate Natural Gas Supply Association of America. ❑ *(cb Billy-Ace Baker)*

By the end of September, gas pipeline matters were nearing a boil. On the eve of Senate Energy Committee hearings, the dilemmas facing all parties were outlined in a story filed from Anchorage (Yereth Rosen, *Reuters*, 1 Oct 2001, "Long-envisioned Alaskan gas pipeline faces hurdles") and in a second story filed from Washington (H. Josef Hebert, *Associated Press*, 2 Oct 2001, "Producers Against Alaskan Pipeline"). Huge supplies of natural gas in the Arctic (35 trillion cubic feet in Prudhoe Bay alone) and identifiable growth in the need for more natural gas throughout North America are insufficient to guarantee construction of the long-stalled gas pipeline. Financial obstacles, falling gas prices, and deeply entrenched wrangling over routing a gas line block the way. BP, Phillips Petroleum and Exxon Mobil (Alaska's three major producers of Arctic petroleum) estimated the costs of building an overland gas pipeline at $15 to $17 billion—too steep a price tag to make the project economically feasible without government subsidy—based on their $100-million feasibility study just completed. These producers want federal legislation to streamline permitting to 18 months. They also want Congress to void or amend a 1977 law that mandates a gas pipeline route along the Alaska Highway. It would be $2 billion cheaper and 500 km (300 mi) shorter to run the pipeline east from Prudhoe Bay, offshore in the Beaufort Sea, to tie into Canada's Mackenzie River Delta gas fields, the producers have concluded. But that shorter 1,800-mile "northern" or "over-the-top" route for the pipeline is widely opposed in Alaska. Alaska's Democratic Governor Tony Knowles said in September, "Mandating an Alaska Highway route is not some jingoistic appeal. It's just based on facts. The over-the-top route isn't going to happen." The producers say they have no plans to build a gas line over Alaska's objections. On the first day of Senate Energy Committee hearings, Chairman Bingaman observed: The country is "at a critical energy security juncture when it comes to gas supplies. By inaction [on a pipeline], we start down a path of increased importation of natural gas." He predicted that foreign producers will form 'a natural gas OPEC' similar to the Arab-led oil cartel. The idea of an Alaska natural gas pipeline has been around for more than a quarter-century. Congress approved construction of a pipeline in 1976, but companies have yet to find the venture economically enticing. ❑ *(cb Billy-Ace Baker)*

In mid-October, proponents of the northern gas pipeline route were somewhat cheered by news of indigenous communities' support and participation in a Mackenzie Valley pipeline (*Reuters*, 15 Oct 2001, "Oil firms, Canadian natives agree on pipeline deal"). After months of talks, this deal provided for one-third ownership in a gas pipeline envisioned to stretch from Inuvik in the Mackenzie River delta to northwestern Alberta, the construction of which was estimated to cost $2 to $3 billion. Spokesmen for the participating producer companies emphasized that even this more modestly priced overland leg of gas pipeline was currently uneconomical because of the low and volatile prices for natural gas. The companies foresee three to four years being required to obtain regulatory approval. ❑ *(cb Billy-Ace Baker)*

Some of those who hoped for more U.S. or Canadian progress on arctic gas and pipeline matters figuratively held their breath until late October. Then, several analysts more or less simultaneously concluded that the short-lived flurry of excitement was indeed over. Typical of these analyses was Jeffrey Jones' story filed from Calgary (*Reuters*, 26 Oct 2001, "Bubble bursts for Arctic natural gas dreams"). A 10-month plunge in the price of natural gas from $10 per million BTU to around $2.50 per million BTU was the chief factor in taking the momentum out of natural gas pipeline initiatives. The threshold price for feasibility of tapping Arctic gas and pipelining it south was estimated to be a little over $3 per million BTU on a long-term average. Various producing companies in Canada were quoted as anticipating several years of economic doldrums that would slow the growth of energy demands in North America and make applying for construction permits premature. Even the least problematic of gas line alternatives could be expected to take a total of six years to complete—three years for regulatory approval, and three years of construction. Canadian producers are also wary of international wrangling over alternative pipeline routes. ❑ *(cb Billy-Ace Baker)*

The Oil Pipeline

As if all the attention lavished upon unbuilt gas pipelines had piqued its envy, the venerable TAPS oil pipeline, now in its third decade of operation, generated some news of its own in late 2001. If Congress authorizes expanded drilling in northern Alaska, the TAPS line will be expected to handle newly discovered exploitable oil. Anticipating that the system might be called upon to serve beyond its originally foreseen lifespan, the Clinton administration two years ago mandated a thorough environmental review of the TAPS' performance before federal pipeline right-of-way leases could be renewed. Those 30-year leases were issued in 1974. The day before terrorists struck in New York and Washington, Yereth Rosen filed a story from Anchorage (*Reuters*, 10 Sept 2001, "Aging Alaska pipeline still sparks controversy") that outlined arguments brewing over the unprecedented environmental impact statement being required. Principal players in this first-ever environmental review of an oil line in operation are the six owner-operator companies of the Alaska oil pipeline, known collectively as Alyeska Pipeline Service Company, federal and state regulators from the Joint Pipeline Office, and environmental groups. Owners and regulators seem generally pleased with the operation of TAPS since oil began flowing through it in 1977. They expressed belief that the pipeline could last another 30 years if properly maintained and looked forward to speedy approval of lease renewals. Not so fast, urged several environmental groups. Richard Fineberg of the Alaska Forum for Environmental Responsibility outlined his concerns: "The correct question is not [whether the pipeline is] better than anybody else's," he said. "The correct question is, does it do what it is supposed to do?" One example of a specific criticism that Fineberg raised was the oil line's leak detection system. A regulatory participant in the environmental review process was quoted as looking forward to analyzing fully which features of the system were working and which were not. ❑ *(cb Billy-Ace Baker)*

The oil pipeline grabbed headlines again less than a month later. On Oct. 4, an intoxicated local resident fired numerous bullets into the insulative jacket sheathing an above-ground section of the 48-inch steel pipeline, about 80 km (50 mi) north of Fairbanks. As Yereth Rosen reported the next day (*Reuters*, 5 Oct 2001, "Crews clean big Alaska pipeline spill from bullet") one of the large-caliber bullets managed to pierce the steel of the pipeline itself. A jet of hot crude oil sprayed through the hole, out over the nearby landscape. High-powered rifle bullets had previously hit the pipeline over the 24 years of its operation, but none had pierced the steel until now. Flow in the pipeline was reduced to 5 percent of its normal rate (which carries about 1 million barrels, or 42 million gallons of oil daily) while Alyeska engineers tried to plug the hole and contain the spilled oil. By the time they plugged the leak and normal operations had resumed on Oct 7 (Rosen, *Reuters*, 7 Oct 2001, "Alaska pipeline restarts after bullet hole closed"), an estimated 6,800 barrels, or 285,600 gallons, of crude oil had jetted out through the hole, according to Alyeska and the Alaska Department of Environmental Conservation (DEC). Because the ground was frozen and covered by light snow at the time of the incident, recovery and cleanup of a high proportion of the spilled oil was expected, with little risk to fish or wildlife resources. ❑ *(cb Billy-Ace Baker)*

Offshore production

While high-visibility events and intrigues dominated the news from the Arctic oil patch, a landmark in Arctic offshore oil development quietly approached (*Reuters*, 25 July 2001, "BP's Arctic Northstar oil field to produce by year-end"). With little fanfare (compared to last year when environmental groups led by Greenpeace International besieged the project), the Northstar platform and its subsea pipeline were maintaining a construction schedule to "come online" by the end of 2001. Production modules left the Port of Anchorage by barge in late July, destined for the manmade gravel island and drilling pad in the Beaufort Sea northwest of Prudhoe Bay. The production modules would enable Northstar to boast the first producing wells drilled on federally leased OCS lands in the Arctic. Startup is scheduled for November or December, and by the beginning of the year, BP spokesman Ronald Chapell expected Northstar to be producing 165,000 barrels of oil per day. That oil will be pumped ashore through a 10-km (6-mi) stretch of pipeline buried beneath the seafloor. ❑

University of the Arctic launched

***Witness the Arctic*: Chronicles of the NSF Arctic Sciences Program, Autumn 2001, 9 (1):25**—In June 2001, after four years of planning by northern institutions in all eight arctic nations, more than 200 northern educators and politicians gathered at the University of Lapland, Finland, to formally launch the University of the Arctic (Uarctic).

In fall 2001, Uarctic offers its first undergraduate course, "The Circumpolar World," focusing specifically on northern topics and northern needs. The course will be available in traditional classrooms at participating institutions in Russia, Europe, and North America, and also on the Internet. The use of the Internet to facilitate learning, particularly for students in remote areas, is central to the Uarctic concept.

For more information see the Uarctic website (*www.uarctic.org*), or contact Asgeir Brekke in Tromsø, Norway (+47/7764-5151; fax +47/7764-5580; *asgeir@phys.uit.no*). ❑

WW II P-38 airplane rescued from beneath Greenland ice

Associated Press, **MIDDLESBORO, Ky., 17 September 2001, by Roger Alford**—*Glacier Girl* has roared back to life, nearly 60 years after being abandoned on a glacier in Greenland and entombed in hundreds of feet of snow and ice. The P-38 Lightning, one of the fastest planes in the sky during World War II, was among six fighters and two bombers forced to crash-land during foul weather on 15 July 1942.

The crews were rescued but the warplanes were left behind and nearly forgotten. As a boy in Middlesboro, Roy Shoffner had become enamored with the piston-engined, propeller-driven P-38s and imagined flying one of the planes, which could reach 405 mph and altitudes of up to 35,000 feet. In the summer of 1992, he recovered one of the P-38s abandoned in Greenland and, a week ago, he reached a milestone: The 1,275-hp engines were fired up at the Middlesboro Airport, turning propellers for the first time since 1942.

Even before that, the plane—named *Glacier Girl* for its years in the ice—had become a hit in Middlesboro, drawing some 3,500 people a month to the Lost Squadron Museum to watch the restoration. "People cannot believe we went down into the ice cap, disassembled the airplane, brought it up one piece at a time, and now have put it back together," Mr. Shoffner said.

The United States built 10,113 of the planes. Just 24 survive and only six are still flying. The pilots of the lost planes had to land on the glacier because they were low on fuel and caught in thick clouds. It took rescuers on dog sleds 10 days to reach the 25 crew members; they got everyone back safely.

By the time Mr. Shoffner—a 73-year-old restauranteur, former banker and 1950s Air Force fighter pilot—got to the plane, five decades of snowstorms had buried it 268 feet deep. Crews used streams of hot water to melt a 4-foot-wide tunnel down to the plane and open a cavern around it.

Disassembling and retrieving the plane took about four months and cost some $638,000, said Bob Cardin, director of the restoration effort. Tooling parts to replace those destroyed by the weight of the ice has pushed the price tag to the $3 million range, Mr. Shoffner said. They hope to taxi the plane at an air show at the airport on Oct. 6-7, and get *Glacier Girl* flying again sometime next year. ❑ ***(cb Peter Barretta, Jr. and Hal Vogel)***

Last regular payment due in Valdez spill deal

Reuters, **ANCHORAGE, 31 August 2001, by Yereth Rosen**—Twelve years after the *Exxon Valdez* supertanker struck a reef in Alaska's Prince William Sound and created the nation's worst oil spill, the energy giant is making its last scheduled payment to settle government claims for environmental damages. A $70 million payment is due Saturday from Exxon Mobil as part of a landmark $1.025 billion civil and criminal settlement reached in 1991. At the time, it was the biggest out-of-court settlement for environmental litigation.

But environmentalists say that the company should pay more because oil still stains some Prince William Sound beaches, and fish and wildlife populations are still struggling. A coalition is calling on Alaska Gov. Tony Knowles and President Bush to use a "re-opener" clause in the settlement that allows Exxon to be billed for an additional $100 million if unanticipated damages are discovered.

The 11-million-gallon spill has continued to hurt populations of herring, sea ducks and some killer whales and has left fish and wildlife vulnerable to disease and reproductive failure—all problems that were not reasonably expected in 1991, the environmentalists said. "The damage is serious. It's ongoing, and it needs to be addressed as quickly as possible," said Rick Steiner, a marine biologist who organized a group called the Coastal Coalition, which believes Exxon should pay more. At a news conference Thursday, he held up a jar of oil collected in July from Prince William Sound beaches. "This is still toxic. It's relatively unweathered," he said. "It's still causing contamination in the sound."

Exxon Mobil could easily pay the extra $100 million, a sum that amounts to two days' profits for the corporation, said Michelle Wilson of the Alaska Center for the Environment.

Exxon Mobil says the 1989 spill left no lasting damage. "Certainly there were severe short-term impacts on many species due to the spilled oil, and they suffered damages. But, based on the studies of many scientists who have worked extensively in Prince William Sound, there has been no long-term damage," the company said in a statement.

"The ecosystem in Prince William Sound is healthy, robust and thriving," the statement said.

Alaska officials surprised by lingering damage

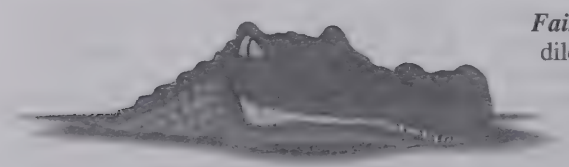
The company has yet to pay a $5 billion jury verdict, returned in 1994 in a case pressed by fishermen, Natives and other private parties affected by the oil spill. The oil company is appealing that verdict.

Assistant Alaska Attorney General Craig Tillery said the re-opener clause must be used between 2002 and 2006. "It's surprising to see that there's still essentially toxic oil out there," he said. Whether the re-opener is successfully used depends on if the state can prove the environmental damage was unexpected, said Charlie Cole, the Fairbanks attorney who represented the state in the 1991 negotiations. The re-opener was "probably the most intensively negotiated" section of the settlement, said Cole, who was state attorney general at the time. He said Alaska and the U.S. government were right to settle the case for $1.025 billion, even though some studies put the environmental damage at up to $15 billion. Waiting for a court judgment would have been risky, he said.

> *"We will be able to point to Kachemak Bay State Park and say, 'Look, we got that from the* Exxon Valdez *settlement.'"*

The $900 million in the civil portion of the settlement has been administered by a six-member panel of trustees, which has used the money to buy and protect 635,000 acres of coastal land, fund scientific studies and pay for environmental restoration. Cole said he is pleased with how the settlement was used, especially the land acquisitions that created new protected areas "which we will have 100 years from now or 200 years from now," he said. He cited one example, a popular park on the Kenai Peninsula. "We will be able to point to Kachemak Bay State Park and say, 'Look, we got that from the *Exxon Valdez* settlement,'" he said. ❑ ***(cb Billy-Ace Baker)***

Icelandic scheme is a croc



Fairfax (VA) Journal*, 7 September 2001**—Plans were announced to import crocodiles to the cold Icelandic city of Husavik in an effort to solve waste disposal problems from the community's fishing industry. Mayor Reinhard Reynisson devised the scheme after reading of a similar solution to waste disposal in Colorado. He said the crocs could munch through the waste while basking in the warm geothermal water that is also used to heat homes across the North Atlantic island. He expects the reptiles quickly to become a popular tourist attraction. Reynisson said, "It's more environmentally friendly to use animals in the food chain to eat the waste than to dispose of it in other ways." ❑ ***(cb Peter Barretta, Jr.)

Greenland sees water exports as 'valuable as fish'

***Reuters*, NUUK, Greenland, 6 September 2001, by Per Bech Thomsen**—Tonnes of clean and drinkable water from Greenland's inland ice cap flood hour after hour down through the Qordlortup Qorua waterfall just north of the capital Nuuk and farther out into the Atlantic Ocean. But soon this water will be funnelled directly into a production vessel where it will be bottled and later shipped to Canadian and U.S. markets.

This is the business plan of Aqua Polaris and an industry that can prove extremely valuable to the 56,000 inhabitants of the Arctic province of Denmark, which receives 60 percent of its public budget revenues in a state grant from the Danish government, under which it enjoys limited home rule.

"In the long run, 10 years perhaps, potential revenue from water will be similar to that of the fishing industry," Greenland's Finance Minister Josef Motzfeldt said. Today, fishing is the dominant industry in Greenland, accounting for 80-90 percent of total exports of around two billion crowns ($119 million). "Ice is a new commodity with a huge potential," Motzfeldt said, citing growing water shortage in many parts of the world.

Greenland, the world's biggest island with an area of 2.2 million square km—almost equal in area to the entire European Union—is 85 percent covered by a permanent ice cap that is up to three-kilometres thick.

Biggest water reservoir

"It is the biggest fresh water reservoir in the northern hemisphere," Hans Kristian Schoenwandt, head of the home rule government's Minerals and Petroleum Office said.

"I don't expect the water industry to be a gold mine for Greenland in the next three to four years but it definitely has enormous potential," he said. Earlier this year, Greenland's parliament passed a bill for granting 20-year concession rights, instead of previously six months, to companies that want to exploit the water resources in certain areas.

Aqua Polaris, a joint venture between local entrepreneurs and Canadian Iceberg Industries, has been waiting years for this bill to be passed and now expects to be given a 20-year permit to exploit the Qordlortup Qorua waterfall from the beginning of next year.

"We expect to extract one million cubic metres of water per year without harming the mountain lakes," said Lotte Joergensen Bech, partner and co-founder of Aqua Polaris.

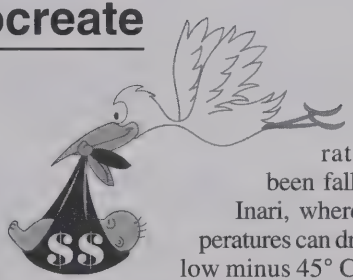
Joergensen assessed annual revenues of around $40 million from full scale production and said she expected Aqua Polaris to start production mid-2002. Aqua Polaris is not the only company which has seen the potential in this unfailing resource. "We are in talks with seven or eight companies, local and international, about permits, " Schoenwandt said.

Besides fresh drinking water, Greenland ice is used for the production of beer, vodka, perfume, and for ice cubes. ❑ ***(cb Billy-Ace Baker)***

Finnish councilor urges Arctic town to procreate

***Reuters*, HELSINKI, 5 September 2001**—A councillor in a Finnish town above the Arctic Circle has challenged residents to produce more babies to boost its dwindling population, promising to step down if they reach a target quota. Teuvo Niemela, chairman of the town council of Inari in Finnish Lapland, vowed not to stand for re-election in 2004 if at least 80 babies are born next year and at least 85 the year after, in a town which had a population of 7,366 last year.

"This is a challenge at least to those who want to get rid of me," Niemela said. "I am prepared also to begin operating in the field myself, and in fear of that I think many Inari people will reproduce," said Niemela, an ear, nose and throat doctor who already has two adult daughters.



The birth rate has been falling in Inari, where temperatures can drop below minus 45° Celsius (-49° Farenheit) in winter. Last year only 69 babies were born there, down from more than 100 in 1995, and 75 babies are expected this year, Niemela said. Niemela has in the past dug into his own pockets to encourage Inari mothers. He paid 20,000 markka ($3,000) to the mother of the first baby born in the town last year and one markka to the father, which he said corresponded to the father's input. ❑ ***(cb Billy-Ace Baker)***

New iceberg adrift off Antarctica

***Associated Press & The National Ice Center*, WASHINGTON**—A 233-square-mile iceberg has broken off the Pine Island Glacier in the Antarctic, the National Ice Center (NIC) reported Friday.

The iceberg, about 25 miles long and 9 miles wide, tore away from the ice shelf sometime between Nov. 10 and Nov. 11 and is drifting northwest in the Amundsen Sea.

Detected by satellite sensors, the new iceberg was located in the vicinity of 75° South latitude and 103° East longitude.

Because of increased melting, new icebergs have been discovered with increased frequency in recent years in Antarctica. Four massive icebergs broke away from the ice shelf in April and May of last year. ❑ ***(cb Billy-Ace Baker)***

Iceland fisheries minister responds to wire reports

***PRNewswire*, REYKJAVIK, Iceland, 24 July 2001**—Arni M. Mathiesen, Iceland's Minister of Fisheries, issued the following statement today in response to recent wire service reports:

"Both Reuters and the Associated Press have carried reports in the past few days alleging that Iceland is on the verge of imminent resumption in commercial whaling. [Iceland stopped commercial whaling in 1986 and all whaling in 1989.] These reports are not accurate. Our official position on this matter is as follows:

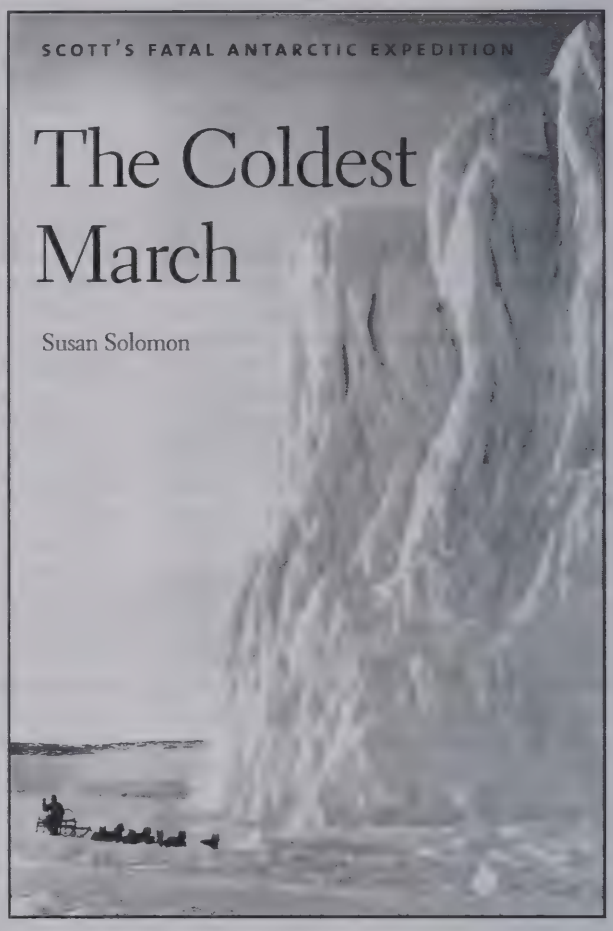
"First, Iceland's Parliament—the Althingi—did vote in 1998 to resume whaling, but at some yet to be determined point in the future.

"Second, Iceland's move to rejoin the International Whaling Commission (IWC) was made so that we can influence this organization's decisions from the inside. After many years as observers of the IWC deliberations, we judged that the time was right for Iceland to once again have a seat at the table. We did not rejoin the IWC as precursor for the imminent resumption of whaling within our 200-mile exclusive economic zone. ❑

The Coldest March: Scott's Fatal Antarctic Expedition

by Susan Solomon
Yale University Press, 2001
383 pp, $29.95)

Reviewed by Jeff Rubin



Ever since the publication of Roland Huntford's meticulously-researched dual biography, *Scott and Amundsen* (published as *The Last Place on Earth* in the U.S.) in 1979, the reputation of British Antarctic explorer Capt. Robert F. Scott has suffered greatly. Huntford systematically dismantled the myth of the polar party's "tragedy" and blamed their deaths squarely on Scott's many failures of leadership and planning. The resulting shadow cast over the Scott legend has been so strong until recently that very little new light has been able to penetrate the darkness and restore the gleam to his once-brilliant name.

In her new book, *The Coldest March: Scott's Fatal Antarctic Expedition*, Susan Solomon—a senior scientist at NOAA who won the National Medal of Science in 1999 for her insight into the origins of the ozone hole—attempts to show that Scott was not the "bumbler" he has recently been judged by some. Although hers is an excellent book and an important addition to the literature of Scott's Last Expedition, it will hardly, as one member of the British polar Establishment wrote wishfully, "[go] a long way to putting polar history right and thereby to killing off the vicious myth about one of Britain's great explorers."

For in fact, much of Solomon's work merely confirms or reinforces the contemporary bias against Scott and his leadership style. Her main contribution is to take a less antagonistic stance regarding the British explorer, viewing him sympathetically as a product of his time and career—and as a man, with human faults like everyone. Truly comprehending the struggles of Scott and his men on the polar plateau, she correctly asserts, is beyond our ability to understand today.

"Scott was a man of remarkable strengths and some stunning weaknesses," Solomon writes. "I seek balance in this book." Tellingly, however, she adds, "He did make some key blunders."

Despite her insistent tone in trying to refute what she repeatedly refers to as "the myth of Scott the bumbler," Solomon actually ends up cataloging what turns out to be a rather long and damning list of his errors.

At times she appears to exaggerate the virulence of the anti-Scott "myth" simply so that she can then refute it, as when she declares that "in its most extreme form," the myth suggests that Scott chose white ponies over black ones "purely for the sake of presentation—that Scott enjoyed their attractive appearance as it complemented the snow." Since she nowhere gives a source for this bizarre argument, it appears to be a mere straw man, set up only to be easily confuted. Elsewhere she writes that Scott's detractors "doubt his truthfulness," but she presents this as hearsay rather than fact.

The core of Solomon's argument is that Scott's team was doomed by abnormally low temperatures on the polar plateau. In their final days, she writes, the men struggled through three weeks in which "almost every daily minimum temperature was a bitter and debilitating 10-20 degrees Fahrenheit colder than what can now be shown to be typical...the temperatures had taken a sharp and unusual turn for the worse, and with them went Scott's chances for survival."

Using data collected from automated weather stations that began operating in the Antarctic interior in the 1980s, Solomon convincingly demonstrates that this weather was unusual not only for the depth of its cold but also for its complete lack of any wind, which the men could have harnessed with sails to aid in their progress. This new information, she says, "points not to errors made by men but toward the capriciousness of nature as the stunningly decisive blow."

The deep cold took a devastating physical toll on the men. It also changed the properties of the snow over which they pulled their sledges, rendering it no more slippery than sandpaper. Scott himself wrote that "it has been like pulling over desert sand, not the least glide in the world."

"In a milder and more normal year," Solomon writes, "with greatly reduced chances of frostbite, helpful winds to whisk their burden along, and a considerably kinder snow surface, surely their fates would have been different."

This misses the point. As Apsley Cherry-Garrard wrote in his classic, *The Worst Journey in the World*, "The whole business simply bristles with 'ifs'." Neither Scott nor Amundsen knew for certain what the weather on the polar plateau would be—and each man planned for the unknown conditions in his own way.

Solomon identifies the true crux of the matter on page 111: "Amundsen had surely prepared extremely well, and he was amply armed for conditions far worse than he expected to find. He ventured onto the unknown of the Barrier with more than enough supplies and dogs, so the surprise at the temperatures that he noted in his writings did not substantially impede his progress in exploration. In short, Amundsen included generous safety cushions, while Scott chose narrow margins." Again on page 222: "Scott...[formulated] his plans logically, but often at the very margins of safety. Amundsen took a different tack, making certain to achieve his goals by preparing for conditions far more extreme than those he expected to encounter." And finally, on page 275, "Scott persistently faltered by cutting things too fine."

That's it in a nutshell.

As the great Norwegian explorer Fridtjof Nansen wrote in the introduction to Amundsen's book, *The South Pole*: "Let no one come and prate about chance and luck. Amundsen's luck is that of the strong man who looks ahead."

Solomon's point of view becomes clear in her assessment of small but long-debated aspects of the polar journey. The bodies of the last three members of Scott's party were found with 35 pounds of geological samples they had carried on their sledge. While Solomon writes that studies prove that the ease of pulling a sledge is governed less by its weight than by the physical properties of the snow beneath its runners, she goes too far when she states that those 35 pounds represented "only a small fraction" of the total burden when added to the 200 pounds of gear the men hauled. Just by dropping that 15 percent of the total weight, they might have saved themselves.

Careful and open-minded readers, however, will find much to consider in this book. Solomon details, for example, the injurious effects of the dehydration suffered by Scott and his men thanks to their insufficient water intake in the dry, thin polar air. And she rightly points out that Scott "was an honest man who wrote frankly of his mistakes, a sensitive man who depicted the Antarctic with great literary skill."

The most fascinating section of the book lies at its very end, in which Solomon examines what she calls "the mystery of what happened in the last days on the Barrier." In the diary found after his death, Scott suggested that the blizzard which kept the three last members of the polar party in their tent had raged continuously for ten days. But based on meteorological data recorded by other members of the same expedition camped 100 miles downwind of Scott's tent, Solomon writes that "it is a virtual certainty" that the blizzard did not in fact blow for more than eight days at most.

What kept the men in their tent? Solomon suggests that it was the frostbite-crippled leader himself. Wilson and Bowers stayed with the injured Scott to the very end, she writes, "but the scientific constraints of modern meteorology as shown here suggest that their deaths may have been a matter of choice rather than chance." Whether such a choice was made, and whether it reflected their own dedication or obeisance to a cruel command made by their desperate leader is a question, Solomon writes, "not for science but for the human heart." This sensitive phrase exemplifies the sympathetic outlook that informs the whole of Solomon's book.

Nicely complimented by excellent diagrams and dozens of wonderful black and white photos by expedition photographer Herbert Ponting, Solomon's text offers a thoughtful and much-needed re-examination of Scott's fatal journey. Her careful scrutiny of the expedition's weather data, coupled with current understanding of Antarctic weather conditions, reveals several important new facets in the complicated picture of the most famous Antarctic expedition.

For more information on Ms. Solomon and her book, visit *www.coldestmarch.com.* ❑

Arctic Mission: By Airship and Submarine to the Far North

by William F. Althoff
Second Revised Edition, The Lighter-Than-Air Institute, Auckland, New Zealand, 2000, ISBN: 0-9583693-3-X, 291 pages, Illustrated $49.95

Review by Bob Kremenak

After the transforming events of Sept. 11, I found it almost comforting to read a book set in the Cold War. Arctic geopolitics during that time are the backdrop for William Althoff's saga of the 1958 Polar voyages of two U.S. Navy ships and their independent but nearly simultaneous passages to or beneath Drift Station Bravo on Ice Island T-3.

The curtain rises in July 1958, and the scene is complex. As today, the American public was unsettled. We had just watched the triumph of Kruschev's Sputnik and then the humiliation of the Navy's on-the-pad Vanguard explosions. In Washington, President Dwight Eisenhower and CNO Arleigh Burke hoped for a public relations comeback with an under-the-North Pole cruise by Hyman Rickover's new *Nautilus*, the world's first nuclear powered submarine. In addition, the Office of Naval Research had a newly improved Goodyear ZPG-2 airship, the *719 Snow Goose,* which could be sent Pole-ward at the same time. The scene was set, and the stakes were high.

Two weeks later, at the end of the story and at precisely the same hour on the morning of August 12, 1958, both ships ended their perilous, historic, and record breaking voyages successfully. The USS *Nautilus* had cruised, submerged, from Pearl Harbor to Portsmouth, England, via the North Pole, and the ZPG-2 had flown from South Weymouth, Mass., and home again via Ice Island T-3, then at about 80 degrees north latitude. Eisenhower went on nationwide TV to announce what one admiral called "America's answer to the Sputnik."

Althoff tells the story well, and it is a study in contrasts. Nuclear submarines were the future and, as it turned out, lighter-than-air platforms like the *Snow Goose* were the past. The *Nautilus'*s transit had been flawless while the blimp's landing gear had to be fork-lifted out of the mud at Resolute after refueling. The author artfully intertwines the stories of the two voyages with that of T-3 and provides expert and elaborate histories, commentaries, and arguments about the development and use of aircraft, surface craft, and submarines in the past and future economy and geopolitics of the far north. He conducted interviews with many of the main players in these stories, and the book is replete with colorful narrative profiles of men such as William R. Anderson of the *Nautilus*, Harold B. Van Gorder of the ZPG-2, Waldo K. Lyon of the Arctic Submarine Laboratory, and James J. Giles of T-3.

Wing Commander Keith Greenaway, a legendary RCAF arctic navigator who flew with Van Gorder on the blimp, emerges as one of the most interesting and well drawn characters. A retired brigadier general in the 1980s and 1990s when Althoff spent time with him, Greenaway (elected honorary member of the American Polar Society in 2000) is credited with providing "singular support" for the writing project. The list of other men on whom Althoff focuses includes Gerry Cabaniss, Norman Gray and Joseph Fletcher of T-3, Hugh Mulligan of the *Associated Press*, and O.C.S. Robertson of the RCN. The story of Sir Hubert Wilkins' role in the development of the polar submarine is especially well told. It ends with his ashes being scattered at the Pole by the through-ice surfacing of the USS *Skate* later in 1958.

Throughout the book Althoff attends to the bumpy course of U.S.-Canadian relations regarding the Canadian Arctic. There is little attention to very recent events here, however. This book was long in preparation, with the author spending years—mainly in the 1980s and 1990s—traveling to gather material, do research, and conduct interviews. A geologist by profession, Althoff also writes on Naval topics, polar aeronautics, and the history of science.

This volume is an archive of detailed information about both nuclear powered submarines and lighter-than-air airships and, of course, about the featured 1958 Arctic missions. As seems more and more usual these days, the publisher appears responsible for many minor production flaws. But the quality of the printing and the over 100 illustrations, many in color, is outstanding. The book ends with 40 pages of excellent author's notes, five appendices, a bibliography and an index. I recommend it as an important addition to Polar libraries everywhere. ❑

Ice Bound: A Doctor's Incredible Battle for Survival at the South Pole

by Dr. Jerri Nielsen, with Maryanne Vollers Talk
Miramax Books, 362 pages, $23.95

Review by Jeff Rubin
***18 Feb 2001,* Chicago Tribune**

How keenly Jerri Nielsen must have felt her inability to follow the familiar Biblical injunction, "Physician, heal thyself!" As the lone medical doctor at the U.S. research station at the South Pole, Nielsen discovered a mass in her right breast. Her anxiety about the lump, eventually found to be cancerous, was magnified untold times by the near-certainty that she would be unable to treat it properly.

For Nielsen made her discovery during the Antarctic winter, and winter at the South Pole is almost unbelievably brutal. After the sun sets for four months, temperatures can drop to 117 degrees below zero. Because of the extreme cold, no aircraft land at the pole from mid-February to late October each year.

"There is," Nielsen writes, "no way out."

Once she confided her predicament to her managers, the U.S. government airdropped medical supplies to the pole station in the supercold midwinter darkness, a mission that made newspapers and broadcasts worldwide. This is the story behind the headlines, the first-hand account of Nielsen's ordeal.

Fortunately, Nielsen and her co-author, Maryanne Vollers, appear to be aware of the fact that other people's medical problems are rarely very interesting at great length. So their remarkable book is not only the story of one woman's struggle against cancer, but a fascinating sociological study of the 41-member tribe that spent the long, dark winter at the pole in 1998-99.

As the "Polies" grew together as a team, they developed their own rituals, idiosyncrasies, body language and even dialect, which Nielsen calls Polarspeak.

Polar life is extreme. It can take weeks to adjust to the nearly 2-mile-high altitude, and Nielsen vividly describes "sucking air like a trout in a creel" upon arriving in the oxygen-thin atmosphere. Fire is an omnipresent danger in the hyperdry air, which also causes deep and painful cracks in the skin. Fresh produce is unavailable most of the year. The isolation and simultaneous lack of privacy can be overwhelming, and the station's bedrooms are smaller than the average prison cell. During the summer, showers are limited to 2 minutes' duration, and can be enjoyed just twice a week.

And then there is the cold—pervasive and all-powerful. "My first breaths torched my throat and chilled my lungs," Nielsen writes. "It was cold from another dimension, from an ice planet in a distant galaxy."

Nevertheless, Nielsen found the pole an unearthly paradise—"a world stripped of useless noise and comforts...the most perfect home I have ever known"—and discerned a unique beauty in the seemingly monochromatic icescape: "It is hard to imagine how many shades of white and blue there are until they, alone, give the world definition." ❑

Antarctic books, briefly noted

Albatrosses
Review by Jeff Rubin

W.L.N. Tickell's *Albatrosses* (Pica Press, 2000, 448 pp, £40) is a comprehensive examination of the magnificent seabirds, many now sadly threatened by human activity. Profusely illustrated with maps, tables, diagrams and 52 beautiful color plates, the book is the most authoritative source of information on albatross distribution, populations, behavior and feeding and breeding biology. The sketches of the history and geography of 20 islands in the Southern Ocean on which albatrosses breed make fascinating reading. The book's final chapter is a detailed deconstruction of Samuel Taylor Coleridge's *Rime of the Ancient Mariner*, revealing among other things that when Coleridge wrote his classic poem, he had never been to sea. Although he eventually did make a sea voyage, he never saw an albatross. ❑

On Antarctica
Review by Billy-Ace Penguin Baker

Len Airey's *On Antarctica* (Luna Books, 2001, 258 pp, $17.95) is an excellent read, especially if the reader has ever wintered over. The book, a series of loosely-related vignettes, is illustrated with 40 of Len's color photographs and excellent drawings by John Elliot very appropriate to the stories.

In 1980, Airey went to Faraday Station to winter-over as an ionosphericist. His contract with the British Antarctic Survey (BAS) was for two years, but he eventually spent nearly four years in Antarctica. His last winter was as commander at Halley Base in 1985.

The book gave me the impression that there was a lack of leadership and discipline at BAS bases and very little teamwork or *espirit de corps*. Personnel were given great freedom to travel for recreation outside the vicinity of the bases. During Airey's time in Antarctica, five base members were killed in two separate accidents while on recreational trips. In each instance, the parties split up and left a single person alone on the ice to fend for himself.

A few individuals made base life hell for everyone else, lowering morale. Other than off-base forays, the only other recreation seemed to be drinking and fist-fighting. During the first winter at Faraday, there was a sauna in the boathouse, complete with pornographic magazines, but it was destroyed by fire.

One of my favorite chapters concerns a Twin Otter airdrop at Rothera station of mail and supplies, including an inflatable sex doll named Cindy. After a night of drunken debauchery, Cindy was found on the barroom floor, cut up and covered with catsup. When questioned, the duty drunks claimed that the doll became pregnant and that they had to perform an abortion. ❑

Antarctica: The Complete Story
Review by Jeff Rubin

Measuring 9½ by 12 inches and weigh- ing a hefty 8 pounds, David McGonigal and Lynn Woodworth's *Antarctica: The Complete Story* (Five Mile Press–Australia, 2001, 608 pp, A$100) is literally a massive effort, an attempt to replicate the comprehensiveness of what is still the best general book about Antarctica ever published, the 1985 *Antarctica: Great Stories from the Frozen Continent,* produced by Reader's Digest. This new book is gorgeous, handsomely designed and with lush color photography on every page, often reproduced in strikingly-large dimensions (though it's a shame that the photographer of each image is not identified). The well illlustrated wildlife and history sections are excellent, as are the descriptions of many Antarctic stations and Antarctic Peninsula landing sites. The maps are also generally very good, including a richly-detailed view of the Gerlache Strait region. The few incongruous sections concerning the Arctic, however, have the feeling of being afterthoughts. Among other minor errata, U.S. readers will be surprised to learn that the Great Lakes are located in "eastern Canada." And a bibliography of further reading—and the authors' source material—is regrettably lacking. ❑

The Discovery of the South Shetland Islands, 1819-1820
Review by Jeff Rubin

Midshipman C.W. Poynter's *The Discov- ery of the South Shetland Islands, 1819-1820* (Hakluyt Society, 2000, 232 pp, £45), edited by R.J. Campbell, is one of the most recent publications of the Hakluyt Society, a registered charity which, since 1846, has produced more than 350 scholarly editions of primary sources of voyages of geographical exploration. This remarkable volume concerns the three initial voyages made by William Smith in the brig *Williams* and the subsequent voyage made by Smith and Edward Bransfield in the same vessel. The journal of Midshipman Charles Poynter included as part of this book is the only known first-hand account of the Smith and Bransfield voyage; it was discovered in an attic in New Zealand in 1995 and bought by the Alexander Turnbull Library, part of the National Library of New Zealand. With 31 handsome illustrations—including several fascinating reproductions of original drawings and sketch maps from the manuscript, along with photographs of the South Shetlands by editor Campbell—this incredibly well-researched study will be of great interest to anyone who enjoys early Antarctic history. ❑

On first science cruise, icebreaker 'Healy' steams to Arctic

***National Science Foundation*, 10 August 2001**—Researchers funded by the National Science Foundation (NSF) are sailing on the maiden scientific voyage of the U.S. Coast Guard's newest icebreaker to study one of the world's slowest growing oceanic ridges, with an eye to understanding how the Earth's crust forms. The USCGC *Healy*, which is outfitted as a scientific research vessel, will carry out the Arctic Mid-Ocean Ridge Expedition (AMORE) from late July until early October. The *Healy* will sail with the German research vessel *Polarstern* to sample and study the Gakkel Ridge, a little-known geologic feature in the Arctic Ocean.

The Gakkel Ridge occupies a unique and important place within the global system of ocean ridges for several reasons. It is the deepest and slowest spreading ridge. It also is the only spot on the globe from which the polar mantle, under the ocean, can be sampled directly. Healy will use dredges to bring up rock samples from the ridge. To date, only two small samples have ever been recovered from the 5000-meter (3.1-mile) deep ridge. "We will recover volcanic rocks that we will analyze chemically to learn more about mid-oceanic ridges in general, including how the planet's oceanic crust is created by seafloor spreading," said principal investigator Peter J. Michael, professor of geosciences at the University of Tulsa. Along the mid-ocean ridge, volcanic material is added to crustal plates that move away from each other. The Gakkel Ridge is special because its seafloor-spreading rate is about one centimeter (.39 inches) per year—the slowest on earth—compared to other ridges that spread at up to 18 centimeters (7 inches) annually. Slow-spreading ocean ridges are a global rarity, and their mechanics are not well understood. Forming the northern end of the Atlantic Ocean ridge system, the Gakkel is one of the least-studied mid-ocean ridges. Data collected by AMORE is expected to provide a basic understanding of the makeup of Arctic Ocean crust and its influence on Arctic Ocean chemistry.

The vessels will make the 800-mile voyage from Norway to the edge of the ice cap in three days, traveling at approximately 12 knots (13.8 mph). Once in the ice, the vessels expect to average 3 knots (3.45 mph), depending on thickness of the ice that needs to be broken. The combination of the *Healy* and *Polarstern* working together will enhance safety in the ice and make for more efficient data gathering. The permanent ice cover of the Arctic Ocean has previously hindered study of the Gakkel Ridge. AMORE used data collected by SCICEX, a joint exercise of the U.S. Navy's Office of Naval Research and NSF in which submarines have mapped large areas of the bottom of the Arctic Ocean, to develop its sampling program, according to AMORE researcher Henry Dick of the Woods Hole Oceanographic Institution (WHOI). "Scientists previously thought there was little volcanic activity along the Gakkel Ridge, but information from a 1999 submarine cruise indicates there may be an isolated, very large megavolcano at the eastern end of the ridge filling up the crack," he said. ❑ *(**cb Billy-Ace Baker**)*

'Healy' follow-up: Scientists find hot activity under Arctic ice cap

***Reuters*, WASHINGTON, 28 Nov 01, by Will Dunham**—Deep below the frozen surface of the Arctic Ocean, scientists aboard a U.S. Coast Guard icebreaker discovered a searing caldron of activity, including numerous underwater volcanoes and deep-sea hot springs that may harbor previously unknown marine organisms.

The findings about the hot times under the polar ice cap were presented on Wednesday by scientists who participated in the nine-week Arctic Mid-Ocean Ridge Expedition funded by the U.S. National Science Foundation.

The scientists mapped and studied the Gakkel Ridge, which runs for 1,100 miles (1,760 kms) from north of Greenland to Siberia beneath the Arctic ice cap. It is the deepest and most remote portion of the global mid-ocean ridge system.

Ocean ridges represent great gashes in the Earth, running tens of thousands of miles (kms) on ocean basins, where the titanic tectonic plates of the Earth are pulled apart, forcing molten rock from deep within the planet's interior to rise up between them and produce strings of volcanoes.

Defying expectations, the Gakkel Ridge turned out to be highly volcanically active. The researchers discovered and mapped 12 previously unknown underwater volcanoes. They also retrieved evidence of a vast field of undersea vents known as "black smokers"—each serving as a super-heated oasis of life on the floor below the frigid Arctic Ocean.

The findings made during a mission to the frozen top of the planet "greatly expand our understanding and knowledge of our Earth," researcher Henry Dick of the Woods Hole Oceanographic Institution in Massachusetts said at a news conference.

"It was a fantastic operation," added Peter Michael of the University of Tulsa, the mission's chief scientist.

Almost nothing had been known about the sea floor far below the Arctic ice cap because methods used to explore the world's other deep-sea ridges were useless in such an inhospitable environment. But the scientists were able to bring back a treasure of geological and biological knowledge thanks, in part, to a pair of sophisticated science ships.

Sophisticated Ships

The researchers conducted their work from aboard the specially equipped 420-foot-long (128-metre-long) U.S. Coast Guard Cutter *Healy*, an icebreaker that plows through the ocean's frozen surface, and a 390-foot-long (118-metre-long) German icebreaker research vessel, the *Polarstern*, in a mission that ran from July 31 to Oct. 3.

Samples taken during the mission revealed an abundance of fresh lava and hydrothermal activity. Geologists, oceanographers and biologists taking part in the mission retrieved samples of rock, mud, water and living organisms they now plan to examine in their laboratories.

After a dredge team recovered evidence of black smoker chimneys, the scientists aboard the Polarstern lowered a camera and other sensing equipment to the sea floor to confirm the presence of these hydrothermal vents.

Vents on the mid-ocean ridges provide chemical energy that nurtures bizarre and exotic life forms and complicated ecosystems that thrive deep below the ocean surface even in the absence of sun light.

Researcher Linda Kuhnz of the Moss Landing Marine Laboratories in California said the numerous organisms retrieved from depths as much as 16,000 feet (5,000 metres) included sponges and shrimp. Previously unknown species may reside in the ecosystems supported by these newly discovered vents, Kuhnz said.

Gakkel Ridge is considered the world's slowest spreading mid-ocean ridge. Because the southern end of the ridge spreads somewhat more quickly than the northern end, the scientists had expected that volcanic activity would peter out as they headed north. Instead, they discovered irregular pockets of volcanic activity rather than a uniform pattern.

All the volcanic and hydrothermal activity does little to raise overall ocean temperatures, the scientists said.

"It would be a little bit like having a propane torch on the bottom of a swimming pool. If you put it at the bottom of a swimming pool and you swim right at the surface, you're not even going to know it's there," Columbia University researcher Charles Langmuir said. ❑

FROM THE ARCHIVES

THE POLAR TIMES • 20-40-60 YEARS AGO THIS MONTH

DECEMBER 1941—In an issue that quite likely went to press only a few days before the Japanese attack on Pearl Harbor one finds the lead article was a report of the November meeting of The American Philosophical Society. Their program and presentations were devoted to the scientific results of the U.S. Antarctica Expedition of 1939-1941.

Dr. F. Alton Wade, Senior Scientist of the expedition, in his introduction suggested that existing and impending hostilities caused an early termination of the expedition. Notwithstanding, he asserted that most of the scientific programs scheduled were carried to completion.

Dr. Paul Siple, known to all APS members, was at this juncture in his polar career the Geographical Leader of the West Base. He reported that his group of five field reconnaissance teams and two aircraft carried out extensive mapping and exploration of the Ross Sea area and came away with over a thousand useable aerial photographs.

The Philosophical Society also heard an address by the world renown Arctic explorer **Vilhjalmar Stefansson**, who claimed that the Arctic provides the best flying zone on the planet. "The northern skies above the Arctic would provide the U.S. with an excellent shortcut to the battlefields of Europe and also Asia." Conversely, he pointed out that "the Arctic skies could serve as a first line of defense against attempts by long-range bombers from Europe or Asia to reach our shores. He cited long periods of sunlight and moonlight providing outstanding visibility and the potential for frozen lakes to be used as airstrips as factors highly favorable to air operations in the Arctic for as much as 10 months a year.

A short article several pages further announced the marriage of the 62-year-old explorer to his 28-year-old staff librarian, **Evelyn Baird**. (now Evelyn Stefansson Nef, a long time member of the APS).

Many articles throughout this edition touched on wartime activities in the northern reaches of Europe and implied a widening of the war to include the U.S.

DECEMBER 1961—President Kennedy expressed "profound satisfaction on the coming into force of the Antarctic Treaty," now ratified by all twelve countries that took part in the Washington conference on Antarctica in 1959. The president cited as important provisions of the treaty, the right of inspection of national bases on the continent, the prohibition of nuclear weapons in the continent, and the setting aside of questions of territorial claims by having the treaty neither renounce nor recognize existing claims for a period of thirty years.

With the Cold War as a backdrop, the representatives of the 12 signatories at their first meeting hailed the treaty as a model of cooperation that could pave the way for future conflict resolution between world powers.

Other headline articles included "Bacteria Left in Antarctica in 1917 Found Alive Under the Frozen Snow" and "Penguins Recall the Voice of Their Mates After Months of Separation."

DECEMBER 1981—Twenty years after ratification of the Antarctic Treaty tensions are mounting between Signatory nations eager to engage in commercial exploitation of the continent. Exploitation of what and how remains uncertain, but the prospects of mineral deposits of coal, iron, copper, and gold seem plausible to many and, of course, oil is on everyone's wish list. Polar scientists play down these prospects, and most are decidedly uneasy with the notion of economic development of Antarctica. Many others who share their unease also fear that the fragile alliance of signatories could come undone if nations start asserting territorial claims in order to capture mineral deposits or oil bearing areas.

Several *New York Times* articles reprinted in this issue express concern that the quest for economic gain could spark competition and conflict between nations. The U.S. has steadfastly viewed Antarctica as a pristine laboratory for basic research into geological history, weather and atmospheric physics. But taking the high road has narrowed the influence of the science advocates in the annual budget skirmishes, and the NSF has expressed alarm over the burden Antarctic operation places on its overall and shrinking budget. ❑

Arctic prototype of bio-warfare foiled 84 years ago

***Reuters*, STOCKHOLM, 24 October 2001**—A Swedish spy helped sow the seeds of today's anthrax bio-warfare scare as long ago as World War I when he plotted to poison reindeer and horses with anthrax-laced sugar cubes. In mid-winter 1917, Germany sent Baron Otto Karl von Rosen, a mercenary from neutral Sweden, on a mission to sabotage British Arctic supply lines to its ally Russia, a crime historian told Reuters on Wednesday.

Norwegian police arrested von Rosen with 19 sugar cubes containing tiny glass vials of anthrax—the same lethal germ that has killed several people in the United States this month after being sent through the mail to officials and journalists. The baron's co-conspirators had planned to spread an anthrax epidemic by feeding the poisoned treats to army horses and reindeer. The animals were pulling sledges laden with arms and supplies across the frozen tundra to Russia from the port of Skibotn in northern Norway. They would have broken open the vials when chewing the sugar cubes and contracted the intestinal form of anthrax, had the plot not been discovered in time.

Von Rosen insisted he was an activist for Finnish independence, though police at the time and historians now believe he worked for Germany. He was imprisoned and deported to Sweden, where his aristocratic status helped secure his release. Two of the contaminated cubes lay undisturbed in a police museum in Trondheim, Norway, until 1997 when a concerned official sent them to a British biological warfare laboratory for tests. The spores were still alive, museum registrar Lars Koen told Reuters in a telephone interview. They have now been sterilised and sent back to the museum, where they are on display.

The failed plot was one of very few confirmed attempts to actually use biological warfare, though several major powers developed germ stockpiles during the 20th century.

Germany and perhaps also France developed modern disease warfare techniques, including anthrax, as early as World War I, according to a Swedish parliamentary defence commission report. ❑ (***cb Billy-Ace Baker***)

OBITUARIES

Roy W. Kline

Old Antarctic Explorer Association lifetime member Roy W. Kline passed away Aug. 19, 2001, in Jacksonville, Florida. He was 68. Roy was a Chief Hospital Corpsman in the U.S. Navy who wintered-over at South Pole Station, Antarctica, during Operation Deep Freeze 1973. In addition to his medical duties, Roy was the station postmaster. He is survived by Lois, his wife of 49 years, a son, Roy Anthony, and a daughter, Barbara O'Dell, both of Jacksonville, Fla. Roy was preceded in death by another daughter, Lois Jean Beauchaine. Condolences may be sent to the family at 4060 Huntington Forest Blvd., Jacksonville, FL 32257. o ***by Billy-Ace Baker***

Raymond Eugene Berger

Ray Berger died at his home in Beevile, Texas, on Oct. 1, 2001. When Ray passed he was at his computer doing one of the things that he liked to do best—exchanging E-mail messages with his Deep Freeze shipmates and friends. He was 78.

Ray was an aircraft commander with Air Development Squadron Six (VX-6) from February 1966 through June 1969. In recognition of his service with VX-6, Mount Berger, in Ellsworth Land, was named in his honor. During the 1965 austral summer season, Ray flew the University of Wisconsin Traverse Party to the area and provided support missions for the group while they were in the field. Ray was the Officer-in-Charge of the VX-6 Detachment in Christchurch, N.Z., during Operation Deep Freeze 1966. He retired from the Navy in 1972 after serving his country for nearly 30 years.

Ray was a charter member as well as a lifetime member of the Old Antarctic Explorers Association. Ray's first wife, Betty Jane, passed away after a marriage that endured for 43 years. Betty Jane bore him a daughter, Cleo, now deceased, and a son, Tom, who resides with his family in Corpus Christi, Texas. Ray is survived by his second wife Frances; his son, Thomas William Berger, daughter-in-law Janice Berger, a 15-year-old step granddaughter; and his beloved Fox Terriers, Pixie and Trixie. Ray and Frances would have celebrated their eleventh wedding anniversary on Oct. 27, 2001. Condolences may be sent to the family in care of Frances L. Berger, 4003 Louise Drive, Beeville, Texas 78102-2113 ❑ ***by Billy-Ace Baker***

Charles Neider

***The New York Times*, 10 July, 2001**—Charles Neider, a prolific essayist, novelist, nature writer and Mark Twain scholar, died on Wednesday at his home in Princeton, N.J. He was 86.

Mr. Neider edited and annotated a dozen anthologies of Twain's short stories, humorous sketches, essays, travel books, novels and letters, as well as "The Autobiography of Mark Twain," published in 1959 and named by the Modern Library in 1999 as one of the 100 best nonfiction books written in English during the 20th century.

The year it was published, the autobiography fueled an international exchange when a critic for *Literaturnaya Gazeta*, the official newspaper of the Union of Soviet Writers, sharply denigrated Mr. Neider's views, particularly his assertion that Twain was mainly a humorist. The critic, who faulted the autobiography for its omission of Twain's political writings, suggested that U.S. officials had tried to suppress Twain's work to make the American public forget him. Mr. Neider sent a request for space to Premier Nikita S. Khrushchev, who allowed the publication of his 1,100-word rebuttal (though the *Gazeta*'s retaliatory response was twice as long). Mr. Neider was amused to receive a $49 check from the *Gazeta* for his contribution.

Between 1969 and 1977, Mr. Neider traveled to Antarctica three times under the auspices of the NSF and the U.S. Navy. He wrote about his experiences in "Edge of the World: Ross Island, Antarctica" (1974) and "Beyond Cape Horn: Travels in the Antarctic" (1980). His novel "Overflight," about a helicopter crash on Mount Erebus, was based on his own nearly fatal 1971 accident there. He also edited "Antarctica" (1972), a collection of accounts from the journals of early explorers. "The Grotto Berg," published this year, is a novella about the Antarctic.

Mr. Neider's latest work, "Adam's Burden," about his eight-year struggle with prostate cancer, is to be published next month. He is survived by his wife of 49 years, Joan Merrick. ❑

OUR BACK COVER:

"King Seals," 1994 stencil by Thomasie and Peter Hikatuktuk ❑

www.americanpolarsociety.org

Thanks to the creative efforts of our webmasters Juan Reyes and Billy-Ace Baker, a new and improved American Polar Society website has been established and is now up and running. You can log on at www.AmericanPolarSociety.org.

We are just beginning to explore the potential of a website, but clearly it offers tremendous opportunities for providing timely information to our membership. It will attract new members and provide a link with other organizations that share our interest in polar affairs. How best can it serve APS? The answer to that question by rights should come from you, the members, who will be the principal users and hopefully major contributors to the website.

Frank Stokes, Secretary of the APS, will coordinate policy and procedural issues for the website, and he asks that you send him your thoughts and comments on how we can build and maintain a vibrant website responsive to the needs and interests of our membership. Frank can be reached at sto396@yahoo.com. ❑

From the editor

Brian Shoemaker introduced our new team in his farewell letter in the Summer issue of *Polar Times,* and I think all of us are wondering if, together, we can fill the large shoes he leaves behind. Certainly, our tasks are easier because of the work he has done, the examples of professionalism he has set and the vast knowledge of things Polar he has passed onto us. We are grateful and, moreover, determined to move *Polar Times* up the steep curve of excellence that Brian established. Please wish us well.

Last summer, yours truly, plus our Polar editors, Jeff Rubin and Dave Norton, along with some of our major and consistent contributors—Billy-Ace Baker, Peter Barretta, Peter Anderson—and our master of production and printing, Charlotte Sinclaire, exchanged ideas as to how we might introduce some things new and different into the *Polar Times*. We were looking for initiatives that would leaven and/or extend the content without losing sight of our obligation to gather the important stories of events and activities happening in the north and south reaches of our ever-shrinking globe. You will see a few of them introduced in this issue, and if they find favor with the readership, we'll add more as space permits.

Our Polar editors, Jeff and Dave, will take some space and offer comments and observations on developments in their respective spheres—extracts from articles that wouldn't warrant reprinting in full, dates and schedules of meetings, events, factoids, human interest clips and the like. Help them out by sending letters or e-mails with printable materials or questions/comments to which they may be able to respond to.

On the opposite page is a look back at *Polar Times*—20, 40, and 60 years back! The editor of the December 1941 issue probably had no inkling of the event about to happen in that month that would change the world forever. Certainly September 11 came as a complete surprise to all of us and will bear changes perhaps equally as profound. We believe the centerfold photograph and its accompanying story define those unique Americans who do their work in the cold and dark continent and that it will have a special resonance with our readership.

Photos are an essential ingredient in any publication, and I must tell you that our files are bare. Please, if you have any that you believe would measure up to *Polar Times* quality, send them to me at 284 Partridge Run, Mountainside, NJ 07092. 1 will take good care of them, return them if so desired, and will afford credit if printed.

One of our initiatives is to encourage submission of examples of Polar art [see back cover]. There's a bunch of it out there, and we would like to include some in each issue. We will provide full credit to the artist along with her/his address if anyone would like to make connection. A clear photo of the work is required, and keep in mind that our dimensions are 8.5 by 11 inches.

Respectfully,

Cliff Bekkedahl